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BERWICKSHIRE

AGRICULTURAL REPORT.

AGRICULTURAL MAP OF BERWICKSHIRE

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GENERAL VIEW

OF THE

AGRICULTURE

OF THE

COUNTY OF BERWICK;

WITH

OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

DRAWN UP FOR THE CONSIDERATION OF THE

BOARD OF AGRICULTURE,

AND

INTERNAL IMPROVEMENT;

AND BROUGHT DOWN TO THE END OF 1808.

WITH SEVERAL PLATES.

By ROBERT KERR, F. R. & A. S. S. E.
Farmer at Ayton, in Berwickshire.

Fertilis frugum pecorisque tellus
Spicea donet Cererem corona.
CARM. SECUL.

VITTORIO EMANUELE III - BIBLIOTECA NAZIONALE - NAPOLI

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ADVERTISEMENT.

THE great desire that has been very generally expressed, for having the AGRICULTURAL SURVEYS of the KINGDOM reprinted, with the additional Communications which have been received since the ORIGINAL REPORTS were circulated, has induced the BOARD OF AGRICULTURE to come to a resolution of reprinting such as may appear on the whole fit for publication. It is proper at the same time to add, that the Board does not consider itself responsible for any fact or observation contained in the Reports thus reprinted, as it is impossible to consider them yet in a perfect state; and that it will thankfully acknowledge any additional information which may still be communicated: an invitation, of which, it is hoped, many will avail themselves, as there is no circumstance from which any one can derive more real satisfaction, than that of contributing, by every possible means, to promote the improvement of his Country.

N. B. *Letters to the Board may be addressed to* SIR JOHN SINCLAIR, Bart. M. P. *London.*

Berwickshire.)

INTRODUCTION.

THE survey of Berwickshire, if properly executed, would be one of the most interesting, perhaps, among the numerous agricultural reports of the united kingdom, which are now published, or preparing for publication. The upper, or hilly part of this county, it is true, is not distinguished by any circumstance of peculiar importance; but the Merse, or lowlands of Berwickshire, may be justly accounted the pattern district of Scots husbandry, according to its most recent and improved system of alternate culture and pasturage. Indeed, the plan which has been adopted in this district is probably the best which could be devised, with a due regard to the circumstances of its soil and climate; and the farmers, by whom it is diligently and judiciously pursued, find it peculiarly satisfactory and profitable, in consequence of its combining two most important advantages. Supplying the most abundant marketable

produce of all kinds, that are in constant request, and raising these at the smallest comparative expence.

The limits, however, of the district, in which this excellent system of husbandry is followed with skill and success, extend beyond Berwickshire, and stretch into the eastern lowlands of the shire of Roxburgh, and the north-eastern part of Northumberland, including North Durham, all of which may be named the VALE OF TWEED; and the agricultural system, to be detailed in this report may be termed the TWEEDSIDE HUSBANDRY. The reporter, however, has entirely confined his researches to the shire of Berwick; and the entire circumstances of the Tweedside husbandry cannot be thoroughly investigated without a careful examination of the surveys of Northumberland and Roxburghshire, in conjunction with this report.

A full and exact account of the agricultural operations of such a district necessarily requires considerable knowledge, extensive experience, and careful observation for its due and adequate execution. Fully impressed with the importance of the subject, and aware of the requisites for treating it with propriety, the writer of this report accepted the appointment with much hesitation; and now offers the result of his labour in the service of the BOARD of AGRICULTURE to the public, with extreme diffidence; though not without hope that his well meant endeavours will be crowned by some share of approbation, and may be useful.

Though

Though not originally bred to farming pursuits, he has resided above fifteen years in the Merse, during all which period he has cultivated a farm of 130 acres of tolerably good turnip soil, some of it excellent; and on which he has carefully endeavoured to prosecute, on a moderate scale, the whole system of Aration, Breeding, Feeding, and Pasturage, as practised by the most judicious and most successful farmers in the county under review, with many of whom he has long lived in habits of intimacy, and continual interchange of observation and opinion, upon all agricultural topics; and has repeatedly discussed, with one or other of these intelligent friends, the subjects of almost all the subdivisions of this report.

When first honoured, by the appointment to draw up this report, he fully expected to have received very important assistance from communications to the Board of Agriculture, in reference to the original report of this county, drawn up by Mr Alexander Low. But, so far as he can learn, the remarks transmitted on the margins of the original reports, from the more distant parts of the kingdom in which they were circulated for that purpose, were not very numerous; owing to the difficulty of communication, as the Board of Agriculture was not possessed of the privilege of receiving or transmitting packets free from postage. Indeed, farmers in general, however willing to communicate their

knowledge of rural affairs verbally, are seldom much inclined to commit the results of their experience and observation to writing.

The reporter was likewise promised a full account of the several breeds of sheep and cattle raised in the county, by a much experienced farmer and stock breeder, now deceased. In both of these circumstances of expected aid, he has been unfortunately disappointed; but he has not failed to avail himself of every other accessible channel, whence useful information could be obtained.

Although the original report of this county was very ably executed, by Mr Low a most ingenious and highly experienced agricultural surveyor; yet such has been the progress of improvement, during the period which has elapsed since that report was drawn up, now thirteen years, that Berwickshire agriculture has since assumed a quite different form, both in its general outline and its particular details; insomuch, that, though certainly much indebted to that former report, for many important circumstances connected with the rural situation and economy of the county, the present is absolutely and entirely a new work. Advantage, however, has been derived from several very judicious MS. additions to Mr Lows report, which he very liberally and obligingly communicated for that purpose, and which, in this report, are distinguished by the letters A. L. the initials of his name.

The

The disappointments already mentioned, and some other circumstances unnecessary to be detailed, have occasioned a delay of a whole year, in forming this report, beyond what was expected by the reporter, when he first engaged in its preparation: But he hopes the time has not been unprofitably occupied, in collecting and arranging its materials. Having traced the outlines, and drawn out a first sketch, from his own knowledge, and careful observation, he has repeatedly conversed upon the subjects of all its subdivisions, with many of the best informed agriculturalists of the county; noting in their proper places all the additional and correctional information thus acquired. Before completing the manuscript, also, all the principal districts, and their practices, have been carefully examined into, and the several sections of the different chapters have been revised, corrected, and filled up, conformably to the observations and intelligence which occurred, in consequence of this final investigation.

Some respectable persons have advanced an opinion, that this report ought to have been confined to those circumstances which are nearly peculiar to Berwickshire, and especially to the detail and results of experiments tried in the district itself, avoiding a formal systematic treatise.

This plan, so totally different from the one circulated by the Board of Agriculture, and the directions which

which it contains, for the guidance of the various reporters, would have required a most minute and intimate knowledge of all the practices of all the other counties in the united kingdom; such, perhaps, as no agriculturalist whatever is or can possibly be possessed of; besides, it would have given a singular motely appearance of confused abruptness, and garbled mutilation to the performance. If rigidly adhered to, by a person sufficiently informed, it would perhaps have become an intire nullity; as, probably, every individual practice pursued in Berwickshire may be found to have been followed in some other district of the kingdom. The idea, likewise, is evidently inconsistent with the printed plan, and the instructions of the Board of Agriculture; and, indeed, after the most mature consideration of the subject, it appeared impossible to have given any adequate report of Berwickshire agriculture, otherwise than upon a systematic plan. Its husbandry is actually systematic; and can hardly be called, in any respect, experimental or imperical. Its principal farms, on which only its peculiar system can be advantageously carried on in its whole extent, are all upon a large scale, seldom less than a thousand a-year of modern rent, often greatly more; and, combining culture with breeding and feeding, the farmers are too completely occupied, in their continually recurring operations at home, and at distant markets, to allow leisure for the minute

minute attentions indispensibly necessary for conducting, recording, and comparing experiments and their results.

The reporter, besides, has reason to suppose, that one ultimate object intended to be attained through these surveys, is to prepare *A General Code of Agriculture*, as the standard or basis of future cultivation and improvement. With such an object in view, therefore, it appears much more eligible to go minutely through the husbandry of each district, even with the certainty of occasional repetitions, or statements of facts and observations that may be met with in other reports, rather than to run any risk of omitting a single particular of any material importance. The reporter, however, is not conscious of having trespassed, by any unnecessary extensions either in the detail of facts or observations, that would not have broken and disfigured the unity of the performance by omission; and is rather more affraid that the limitation of his experience may have occasioned faults of omission, in spite of his utmost endeavours, and that he may have failed in doing that justice to the excellence of Berwickshire husbandry which it deserves.

In the execution of this report, it has every where been anxiously endeavoured to be perspicuous, without prolixity; so as to convey all the information which seemed necessary upon each successive topic, without descending

descending into too minute a detail, and without obtruding the particular sentiments of the reporter; unless where these seemed called for, in the plan pointed out for the guidance of his researches; and unless where the subject appeared imperiously to require illustration or commentary. Upon the whole, though conscious of much remaining imperfection, unavoidable from circumstances that do not require to be here enlarged on, the reporter hopes that this performance will be found a faithful picture of Berwickshire husbandry, and fully adequate to enable any agriculturalist, of moderate knowledge and experience, to understand, and to copy, if he chuses, the system which is so judiciously, industriously, and successfully pursued in this county, by a numerous, respectable, and intelligent race of farmers.

Some little deviations from the plan of the reprinted reports, as circulated by the Board of Agriculture, have been unavoidable, in certain portions of this report, where the alterations will be found particularised. These have been occasioned by the dissimilar circumstances, legal, political, and agricultural, which exist between England and Scotland, in regard to the particular topics to which these subdivisions of the plan refer.

As the systematic Table of Contents, or Analytical Plan of the Report, is exceedingly full and comprehensive, it has not been deemed necessary to add an Index, which would have only served to increase the size of the

the work, and to enhance its price, without answering any useful purpose.

Having received the sanction of the Board of Agriculture, the reporter now submits the result of his labours to the judgment of the public with all deference and respect; conscious that he has exerted his utmost endeavours to do justice to the important task with which he has been entrusted.

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Memorandum

Memorandum.

Through the whole of this report, the English statute acre, and the Winchester measure of grain are uniformly used, unless where expressly mentioned otherwise.

ERRATA.

Owing to the distance of the reporter from the press, the following errors have escaped detection, which the reader is requested to correct with a pen.

Page 41	line 25,	For *scist*,	read *schist*.
45	24,	*west*,	*east*.
60	18,	*on*,	*or*.
63	31,	*As*,	*A*.
84	6,	*with*,	*in*.
87	25,	*west*,	*east*.
88	2,	*short*,	*most*.
276	16,	*homes*,	*houses*.

In Chap. VII. Sect. ix. § 10. it has been omitted to say, that the roller is often applied to land under a crop of beans, even after they are considerably above ground, to break the clods. This operation used formerly to be done much more expensively by hand, with *clod mells*, or wooden mallets, on all cloddy land, whatever might be the growing crop; but is now universally performed by the roller.

CHAP.

BERWICKSHIRE REPORT.

CHAP. I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECT. I.—SITUATION AND EXTENT.

THE county of Berwick, usually called Berwickshire, is situated at the south-east extremity of Scotland, on the coast of the British or German Ocean, and along the north-east border of England. Its principal division was anciently called *The Merse*, or March, a name which it still retains, probably signifying *the border district*, or frontier province; and this district seems formerly to have included a considerable portion of the eastern lowlands of Teviotdale, or the county of Roxburgh, as Roxburgh castle, in that county, was anciently called March-mount, or the Castle of the March, or Merse. This denomination, the Merse, is still often used, loosely, for the whole county. It is hardly necessary to say, that the modern name, Berwickshire, is derived from the town of Berwick-upon-Tweed, once its

chief burgh or county town; but which was, many years ago, disjoined from Scotland, and annexed to the Crown of England; though, after the demise of Queen Elizabeth, and the accession of James VI. of Scotland to the English throne, it was constituted a peculiar jurisdiction, hypothetically separate from both kingdoms.

Berwickshire is bounded on the east by the British or German Ocean; along which, from the boundaries of Berwick township to St Ebbes Head, its coast trends N. N. W. for eight miles and a half. The shore then takes a W. N. W. direction, for other nine miles, to its junction with East Lothian; and, by the revenue laws, this latter part of the coast is considered as being within the limits of the Firth of Forth. Almost the whole of this coast consists of bold rocky precipices, of considerable altitude, and almost inaccessible, except at Eyemouth and Coldingham bays, and at two or three other places, which are accessible to fishing boats, at sandy or gravel beaches, at the foot of the rocks.

The whole irregular northern boundary joins with East Lothian, along the mountain range of Lammermoor. But, within that line, Berwickshire entirely surrounds a detached portion of considerable extent, belonging to one of the East Lothian parishes; while, as a full equivalent, the most northerly part of this county is situated beyond, or to the north of, the Lammermoor hills, and is continuous with the extensive and fertile vale of the Lothians.

Clint-hill, one of the highest of the Lammermoor chain, at the north-western extremity of the county, rises 1544 feet above the level of the ocean. The general range of these mountains declines as it approaches the

the sea, averaging about 1000 feet in perpendicular elevation, and terminates in three precipitous promontories, at Fast-castle, Ernscleugh, and St Ebbes Head; which last is detached from the extremity of the chain by a deep narrow dell, almost level with the high water mark at spring tides.

The western irregular limit of Berwickshire is partly with Mid-Lothian, towards the north, but chiefly with Roxburghshire, from which it is partly divided, on that side, by the lower and principal stream of the Leeder Water, to its junction with the river Tweed near Melrose.

Excepting a portion of Roxburghshire adjoining Kelso, and likewise excepting the township of Berwick, both of which are on the north side of the Tweed, that beautiful river, in a meandring course of about 40 miles, forms the southern boundary of this county, dividing it from Roxburghshire on the west, Northumberland in the middle, and North Durham on the east, of this line of division. North Durham is a detached portion of the English bishopric, and county palatine, of Durham, having the whole extent of Northumberland interposed between it and the main body of the patrimony of St Cuthbert, which once held also extensive possessions in Scotland. From Berwick township, on this southern side, Berwickshire is divided by a semilunar dry march, consisting partly of a ruinous dry stone wall, called the bound dyke, and partly of a narrow lane, called the bound road; this boundary extends from the sea shore on the east, to the river Tweed on the west, crossing the Whitadder in its course.

Dunse, nearly in the centre of the county, and its principal town, is exactly two degrees of longitude west

from London, and is in 55° 49′ of north latitude. According to the excellent survey and map of this county, by Mr JOHN BLACKADDER, from which all the measures and circumstances here noticed are derived, the most easterly point, where it joins Berwick township, is in 1° 41′ west longitude from London; the western extremity reaches to 2° 34′ west; the extreme south point, on the Tweed, is in 55° 36′ 30″; and the most northern, on the coast, where it joins East-Lothian, is in 55° 58′ 30″, both of north latitude.

In notices on the above mentioned map, the extreme length of the county, from east to west, is said to be 31¼ miles, and its extreme breadth, from north to south, 19½. Yet, carefully measured upon its own scale, it certainly extends 34 miles in length by 21 in breadth. According to Mr BLACKADDER the mean leangth is 26½ miles, the mean breadth 17 miles, and the total contents 285,440 acres. But, from a very careful consideration of the map itself, attentively measured by its own scale, the mean length appears to be 28 miles, the mean breadth 17 miles, and the consequent contents 304,640 acres. These estimates, however, as differing from those given by Mr BLACKADDER, are here mentioned with much diffidence. According to his own measures of the mean length and breadth, the total contents ought to be 285,600 acres, or 160 acres more than he states. Yet, knowing the perfect accuracy of that gentleman as a surveyor, it seems highly probable that these apparent discrepances may have arisen from circumstances and considerations, which he had not room to explain upon the map: perhaps from allowances for roads and rivers.

Of

Of the three former reporters of this county, Mr Low and Mr BRUCE differ essentially from Mr BLACKADDER, and from each other, in the foregoing enumerated particulars, probably from having trusted to some old inaccurate maps, while Mr HOME adopts the measures of Mr BLACKADDER implicitly. All such estimates and computations, being partly founded upon assumed and conjectural data, differing according to the information and opinion of the calculators, must necessarily be in some measure vague and unsatisfactory. To give, however, as full a view of the subject as possible, a comparative enumeration of the several measures and computations is here subjoined: Yet, more confident in the accuracy of the surveys and estimates of Mr BLACKADDER, than even in those above assumed, from attentive inspection of his map, the measures reported by that experienced surveyor shall be followed generally in the sequel.

Comparative Table of Estimated Extent.

Particulars.	*Blackadder.*	*Low.*	*Bruce.*	*Home.*	*This Report.*
Extreme length,	31¼ miles.	27½ miles.	Omitted.	31¼ miles	34 miles.
Extreme breadth,	19¼ ditto.	19½ ditto.	Omitted.	17 ditto.	21 ditto
Mean length,	26¼ ditto.	Omitted.	30 miles.	Omitted.	28 ditto.
Mean breadth,	17 ditto.	Omitted.	17 miles.	Omitted.	17 ditto.
Square miles,	Omitted.	431.	510.	446.	476.
Statute acres,	285,440.	276,000.	326,400	285,000.	304,640.

Mr BLACKADDER does not mention the estimated number of square miles in this county; but, according to the mean length and breadth which he assumes, in the notices on his map, they ought to be 446½, which would produce 285,600 acres. Mr HOME, without mentioning the mean length and breadth, gives a proportion of square miles which does not precisely agree with the mean measures of Mr BLACKADDER, yet adopts exactly his extent in acres; for, although Mr HOME only gives 285,000 acres, as in the foregoing table, yet that is an obvious oversight, perhaps a typographical error, as he agrees precisely with Mr BLACKADDER in the subsequent parts of his report.

Since the dismemberment of Berwick from Scotland, Lauder remains the only royal borough, or Parliament town, in the county; and, in conjunction with Jedburgh, Haddington, Dunbar, and North Berwick, sends one representative to the Imperial Parliament. Greenlaw, a small village in an inconvenient situation for the purpose, is the county town, where all public meetings of the freeholders are convened, where the Sheriff Court and Quarter Sessions of the Peace are held, and in which is the county jail. Dunse and Coldstream, small towns, are the only places of any size in the county, though neither of them are of much importance. But Dunse is much better fitted, from being more central to the chief population, than Greenlaw, for being the county town.

Eyemouth, little better than a fishing village, is the only sea port within the county. Before 1776 this place possessed a considerable trade in grain and oatmeal, exported coastways, chiefly because the Guild, or Corporation of Berwick, till then refused the freedom of trade

trade to those who were not burgesses, and would not even permit natives of Scotland to serve apprenticeships for the freedom of their town. So long after the cause ceased, did the hostile prejudices continue to operate, which took place when Berwick was the principal frontier garrison of England, during an almost incessant warfare of two hundred years, laying waste and depopulating the borders of both kingdoms, from which they have not yet completely recovered. At the above mentioned period, Berwick judiciously opened its trade to strangers, or non-freemen, upon moderate terms; and its shipping having greatly increased, the corn trade from an extensive circuit, on both sides of the borders, now principally centers there. Before that period a considerable quantity of grain and oatmeal was carried through Berwick, from Northumberland and North Durham, to be shipped at Eyemouth, where one respectable corn merchant still carries on a considerable trade, the hereditary representative of one of the oldest commercial houses in the kingdom.

Formerly, by various evasions of the revenue laws, a considerable contraband trade, in wine, foreign spirits, tea, and tobacco, was carried on at Eyemouth. But this illicit traffic, by the amendment and better execution of the revenue laws, is now happily abolished. Even a petty smuggling trade, mostly in Hollands gin, and chiefly confined to fishers, and other low people, is now very much curtailed, or at least seems to have changed its place of action to the English side of the borders. To such men, who have little or nothing to lose, the great profits of their petty illicit dealings, hold out irresistible temptation to transgress the laws, and they are much encouraged to persevere by regularly established

agents of the Kentish and Flushing smugglers, who allow credit for the smuggled goods. Until some uniform and effective system can be devised, for striking at the root of this evil, so injurious to the revenue, the fair trader, and the morals of the people, partial and local exertions of the revenue officers only compel the principal smugglers to shift the stations of their nefarious traffic.

The harbour of Eyemouth is the private property of a country gentleman, to whom some ancient small customary dues are payable from trade and shipping, but without any reciprocal obligation to improve the port, or to keep its necessary accommodations in repair, for which, indeed, these dues are utterly inadequate. It consequently long remained a mere open tide creek, at the influx of the Eye into a bay of some extent, and entirely exposed to the sea in several directions. In that state nothing but boats and barks, or sloops of the smallest size, could enter, and the mouth of the river was often blocked up by a bar or bank of gravel, driven in by gales from the sea, from the beach of the bay. In the old feu charters to the vassals of Eyemouth, the feuars are taken bound to assist in clearing away such obstructions from the mouth of the river, which often accumulated so as to prevent all access or exit during weeks or months, unless thus removed by labour, or by freshes or floods in the river.

It may be necessary to mention, that by feuars are meant hereditary proprietors of small portions of land, or of houses, holding under the great freeholder or lord of the manor; the particular nature of which tenure will be explained in Chap. II. Sect. II. § 2. of this report. It may be sufficient to say here, that these feuars are analogous

logous to English copy-holders of inheritance, though not exactly similar.

About the year 1747, the late William Crow, Esq. of Netherbyres, a gentleman of distinguished genius, and of great mathematical and mechanical knowledge, planned what is now called the Old Pier, which he got constructed by means of private subscriptions. By this the accumulation of gravel was much prevented, in consequence of its resisting the oblique reverberation of the waves, from the beach of the bay into the mouth of the river. After this the harbour became practicable for coasting vessels of some size. Before this material improvement hardly any thing whatever could either be imported or exported at Eyemouth. Sensible of their monopoly from situation, it is said that the traders in Berwick behaved very cavalierly to the Berwickshire farmers who had grain to sell, and to the country gentlemen who had occasion for any imports; but after the building of this pier, and their experience of the rivalship of the trade at Eyemouth interfering materially with their own, they altered their conduct very considerably in these respects. Yet more grain and oatmeal and malt continued to be shipped from Eyemouth than from Berwick, until that town opened its trade, as before mentioned, to resident non-freemen.

About 1766, the elbow of the Old Pier, constructed under the direction of Mr Crow, was undermined by a great flood of the Eye, and fell down, greatly obstructing the harbour, by a number of large stones from its ruins. Sensible of the great advantages derived from this pier, and wishing to protect the harbour from the sea, which made free passage in heavy gales, over the rocks where the New Pier now stands, the gentlemen

of

of the county got the late highly celebrated Mr SMEATON to inspect the place, and to examine shipmasters and pilots, that he might direct such improvements as he should judge necessary. He accordingly planned the New Pier, which was begun in 1769, and finished in 1773, at the expence of L.2100. The contractor is supposed to have lost near L.100 by his bargain; and the members of the committee, though appointed by a county meeting, having rashly contracted for the work, without sufficient funds, had a deficiency of above L.600 to defray themselves. Owing to this, little was then done towards repairing the gap at the elbow of the Old Pier, nor for a good many years afterwards.

At last in 1796, a resolution was formed to endeavour to procure funds for rebuilding the gap in the old pier, and a further breach of its turret, or extremity, which took place from an immense flood of the Eye in November 1794, and for repairing the parapet of the new pier, which had become defective. Private subscriptions were procured to the extent of nearly L.1000, and a donation was given of L.300 by the Convention of the Scots royal boroughs. In consequence of these aids, the necessary works were commenced. Sensible, however, that nothing permanent could be effected, without some regular and certain income, for repairs and farther improvement, an act of Parliament was procured in 1797, imposing certain duties on vessels coming into the harbour, and vested under the management of trustees with perpetual succession, for the express purpose of repairing, improving, cleaning, and deepening the harbour.

Under this trust, from the before mentioned subscriptions and donation, and out of the funds created by the act,

act, the Old and New Piers have been thoroughly repaired, and an extensive quay wall has been built, for facilitating the loading and unloading of cargoes. A break water has been constructed to keep off land floods from injuring the vessels at the quay, and which was expected to prove useful, for removing a sand bank, which considerably hampers the entrance: But hitherto, it rather seems to have occasioned a second bar within the harbour, and it has too much lessened the harbour space; insomuch, that in a gale of wind in September 1807, several vessels, that had taken shelter, were obliged to go to sea for want of room. Upon repairs and improvements, the trustees have expended since June 1796 to September 1807, the sum of L.2250. Plans are now in agitation for deepening the harbour, and for laying down anchors with buoys, for warping vessels in and out of the bay, and the funds are amply sufficient for such gradual ameliorations as may be thought requisite, and for keeping the present accommodations in repair. In these circumstances, it is much to be desired, that the trustees were provided with a plan and specification for putting the harbour into the best order, and capable of being gradually executed as their funds become efficient.

The harbour dues imposed by the act, which are sufficiently moderate, are, one penny for every quarter of all grain, malt, meal, and flour; sixpence per ton on all potatoes; one halfpenny per bushel on all salt, shipped from or landed in the harbour; twopence per ton register, on all vessels which may arrive in the harbour to load or unload their cargoes or any part thereof; one penny per ton register, on all other ships or vessels that may enter the harbour; one guinea for every foreign ship that

that may come into the harbour. From these duties, the yearly revenue derived by the trustees has hitherto averaged about L.60. The small ancient dues still belong to the private proprietor.

For these advantages of this harbour in its present state, Eyemouth has been principally indebted to the persevering and judicious exertion of the late John Renton, Esq. of Chesterbank, a most intelligent and active Magistrate, many years in the commission of the peace, and long under Sheriff of the county, who was nearly 80 years of age when he undertook and accomplished this most beneficial public improvement.

From this material amelioration of its harbour, Eyemouth bids fair to recover some respectable portion of trade hereafter. In the mean time, however, it has to struggle against the superior advantages of Berwick, which already possesses capital and shipping. The only considerable inconvenience of the port of Eyemouth, besides being a tide harbour, which is irremediable, is being above 20 miles distant from its custom-house at Dunbar, which occasions some expence and delay to trade.

It may be proper to mention in this place, that in the entrance of Eyemouth bay, there are some detached rocks, called the Hircars, in deep water, partly covered at high tides, partly always above water. The reporter does not pretend to any knowledge in maritime affairs, or in the science of civil engineering; but were it practicable to join these rocks with either shore of the bay, by a pier, or buttress of cones like those of Cherburg, a safe harbour might be formed for vessels of any size and burthen, accessible at all times of tide, and in all winds, which would certainly be of infinite importance, more

especially

especially in time of war, to the military and commercial marine of Britain. Even if practicable, the expence could not fall short of L.100,000; and consequently could only be afforded at the public charge.

It is said that an excellent harbour might be made near Dunglass, at the north-eastern extremity of this county, or in the next adjoining county of East Lothian, close upon the borders of Berwickshire; and that it might even admit of ships of war. A slight attempt for this purpose was made there long ago by the late Sir John Hall of Dunglass; but his erections were ruined by a storm, and have never been resumed.

To the exertions of the same respectable gentleman, Mr Renton, Eyemouth likewise owes, about the same period, the construction of a very useful stone bridge over the deep dell of the Eye; by which a most incommodiously steep bank, in the communication towards Berwick, has been effectually surmounted.

BERWICK, a respectable trading sea-port, garrison town, and free borough, was anciently the head town of this county, to which it still gives name. It has long been disjoined from this county and from Scotland, and still remains a peculiar and anomalous jurisdiction, having been declared neutral by James VI. as arbitrator between the two kingdoms, after his accession to the Crown of England. In acts of Parliament and royal proclamations extending to Great Britain, Berwick was included; but when only to that part of Great Britain called England, Berwick required to be specially mentioned, *and our good town of Berwick-upon-Tweed*; and, only in the present reign, an act of Parliament provided that in such proclamations, or in laws referring to England, Berwick should be held included, although not

specially

specially mentioned. Yet Berwick and its township escaped the first income-tax for one year, in consequence of some omission in the act, respecting the appointment of commissioners. Berwick sends two representatives to Parliament, possessing in this respect the privileges of an English town. It is subjected to the civil and criminal jurisprudence of England, and is in communion with the English church, though a large proportion of its population consists of presbyterian dissenters *.

The other small towns or villages of Berwickshire are too inconsiderable to require any particular notice in this place, though several of them will necessarily be incidentally mentioned in the course of this report.

SECT. II.—DIVISIONS.

1. No political divisions, properly speaking, exist as to this county. In ancient times, the county or shire of Berwick seems to have been a separate jurisdiction from the bailliery of Lauderdale, and to have been itself divided into the Merse and Lammermoor districts. It is not easy to say what had been the exact boundaries and extent of these three divisions, now almost obsolete, and

* A very full account of Berwick, as a Supplement to the Statistical Account of Scotland, was published in 1799 by Dr Fuller, now physician at Sunderland.

and only having reference to the fiars, or average prices of grain, to be afterwards explained.

For more conveniently managing the militia ballots, the county is divided into several districts of three or four parishes each; and a similar arrangement of districts has been lately formed, for monthly sessions of the peace, on purpose to keep up and enforce the police regulations, for settling occasional differences among the lieges, and for determining pleas in small debts of or below the value of five pounds Sterling.

For the purposes of agricultural inquiry, the whole county may be very conveniently considered under two districts, the Merse and Lammermoor. Including in the former all the comparatively low land, along Tweed, Whitadder, Blackadder, and Eye, and including Lauderdale in the latter, along with the more eastern hilly country, peculiarly called Lammermoor. Various accounts are given of the origin of this name of Lammermoor. This hilly district most probably acquired that appellation from the lambs of the low country having been anciently sent to that moor, when taken from their mothers. It still remains a practice in some sheep farming districts, when the lambs are *spained*, or taken from the ewes, to send them for some weeks to the wildest part of the farm, or to distant high moor pastures.

To be minutely accurate, in reporting the extent and contents of these divisions, would require an actual survey for the express purpose, attended with such trouble and expence as to be far beyond the powers of a private individual. Were even a Cadastre, or Doomsday-book of the quantities, qualities, and value of the several districts in the county, and of the various kinds and appropriations of soil, arable, pasture, moor, clay, loam,

loam, gravel, moss, &c. in each, to be attempted, and executed with the utmost care, abilities, and information, the proportions and values of these would very materially change at one end of the county, from the continual progress of improvement, before the survey could reach the other extremity. Impressed with the full force of this opinion, no stress is meant to be laid in this report on these circumstances; yet, in compliance with the example of former reporters, the particulars of these matters are here attempted to be recorded on what seemed the best authority that could be procured.

According to the general division of the county just pointed out, the Merse designates the whole lower ground from Tweed up the cultivated slopes of the lower southern range of the Lammermoor hills, including the western parishes of Nenthorn and Merton. Mr BLACKADDER estimates this division to contain 100,226 acres. The whole remainder of the county, with an exception to be mentioned in the sequel, is therefore to be considered as forming the Lammermoor district, and, according to the same authority, should contain 185,214 acres. But he computes that there are 7280 acres of lowland, and arable slopes of the lower hills, in Lauderdale, besides a detached portion of lowland, containing 2200 acres, at the north-east corner of the county, beyond, or to the north of, the east end of the Lammermoor hills, in the parish of Cockburnspath, or Colbrandspath, adjoining the vale of East Lothian. Consequently the hill lands of Lammermoor and Lauderdale are thus reduced to 175,734 acres. Some farther considerable reduction might still be made from this estimate of the hill lands, as there are several nar-

row tracts of vale land along water sides, winding deep among the mountains, and many arable slopes of the lower interior hills themselves. But these are, most probably, fully compensated for by various hills, and moors, and bogs, within the district of the Merse.

While enumerating the divisions of Berwickshire it may be proper to mention the township of Berwick, geographically situated within the county, which may probably contain 4680 acres of land, almost entirely arable, exclusive of the site of the town and suburbs.

Thus, according to the respectable authority of Mr BLACKADDER, the whole of this county may be estimated and distributed as in the following table :—

	Acres.
Lowlands of the Merse	100,226
Lowlands in Lauderdale	7,280
Lowlands of Cockburnspath	2,200
Berwick Township	4,680
Total arable, improved or improveable	114,386
Hill lands of Lammermoor and Lauderdale	175,734
Total extent in statute acres	290,120
Or, leaving out Berwick Township ...	285,440

2. Besides the two great districts of the Merse and Lammermoor, Berwickshire is divided into 31 parishes, of which 18 may be considered as in the Merse or low country, and 13 in Lammermoor, or the hill district.

Those belonging to the Merse district are, 1. Whitsom ; 2. Chirnside ; 3. Fouldean ; 4. Eccles ; 5. Coldingham ; 6. Hutton ; 7. Dunse ; 8. Coldstream ; 9. Langton ; 10. Ayton ; 11. Edrom ; 12. Mordington ;

13. Fogo; 14. Eyemouth; 15. Buncle; 16. Swinton; 17. Nenthorn; 18. Ladykirk.

The Lammermoor district contains, 19. Legertwood; 20. Greenlaw; 21. Cockburnspath; 22. Merton; 23. Channelkirk; 24. Abbey St Bathans; 25. Earlston; 26. Westruther; 27. Lauder; 28. Longformachus; 29. Polwarth; 30. Gordon; 31. Cranshaws. To these must be added Home, formerly a parish by itself, but some time ago annexed to, or united with, the parish of Stitchel in the county of Roxburgh.

While engaged in the ecclesiastical divisions of the county, it may not be incurious or improper to give a slight general view of the ecclesiastical polity of Scotland, which, though not directly connected with agriculture, is intimately allied to the particular division here under review, and is singularly different from the church arrangements of territory and jurisdiction in England.

In every parish the minister, and two or more elders chosen by him, form a judicatory, called the Kirk Session, of which the schoolmaster of the parish is almost always the clerk, and generally a member. To this court belongs the care of the parish poor, so far at least as respects the distribution of the funds collected at church, or arising from any other source of voluntary donation. It acts likewise in a censorial capacity in regard to the moral conduct of the parishioners, as any person, guilty of flagrant immorality, may be cited to appear for reproof, and may even be condemned to undergo public penance in church, accompanied by a suitable reproof and exhortation to amendment, before the congregation; the culprit being placed in a conspicuous situation, upon an appropriated seat, called the repenting stool.

stool. But of late years, these public appearances are uncommon, and private rebuke has been substituted.

For contumacy, or scandalous reiteration of gross and notorious immorality, the minister and his session may inflict a sentence of excommunication, to compel submission or amendment. Anciently this sentence was of most important consequence, as a person under its fulmination became *ipso facto* an outlaw, incapable of recovering debts, of succeeding to heritage, or of devising property, and subject to numberless other civil privations; in short, the laws of the country existed not for such a person, except to punish. But by act of Parliament, soon after the union between England and Scotland, the civil consequences of Scots excommunication were abrogated, and excommunications are now almost entirely unknown, as they now only debar the person from church privileges, such as marriage, baptism, and the holy communion. Even the minister of the parish is liable to censure from his own elders, in any rare instance of immoral or indecorous conduct. But such cases are mostly brought at once before the Presbytery, which is the next church judicatory in the ascending series.

The whole parishes in Scotland, in number 893, are distributed into 78 Presbyteries. Of these Presbyteries three are peculiarly belonging to Berwickshire, Dunse, Chirnside, and Lauder, though the last contains two parishes that are not within the county, and two parishes belonging to the county are in Presbyteries of other counties. A Presbytery, as a church judicature, consists of all the parish ministers within its bounds, and one elder, or lay brother, from each parish, but these latter very seldom attend. To the Presbytery all sen-

tences of kirk sessions may be appealed for revisal, alteration, reversal, or confirmation: and before it all charges against ministers or schoolmasters, within its bounds, are usually brought in the first instance. The Presbytery, upon proof, may proceed to censure, suspend for a time, or depose; but all its sentences are liable to be appealed from to the Synod, the next superior judicatory. All candidates for admission to holy orders in the church of Scotland are examined by one or other of the Presbyteries, in classical, philosophical, and theological learning; and having given satisfaction in these points, and having exhibited private and public specimens of their pulpit eloquence, they receive licences to preach. The Presbytery likewise places and ordains such licensed preachers as receive presentations to benefices within their bounds, after inquiring into their moral character, and examining their qualifications for the office of the ministry. It can likewise ordain a licensed probationer who has no church preferment, by which he becomes entitled to officiate in dispensing the sacraments. Licensed probationers are analogous to deacons; and ordained preachers, with or without preferment, to priests in the English church.

The 78 Presbyteries are arranged into 15 Synods. The whole parishes of Berwickshire belong to the Synod of Merse and Tiviotdale, except Cockburnspath, which is in the Synod of Lothian and Tweedale. The whole ministers of the bounds are members of the Synod, together with one delegated elder, called the ruling elder, from each Presbytery. The Synod can alter, revise, confirm, or reverse the sentences of Presbyteries, or send them back for reconsideration, with or without directions. But appeals are competent from all their decisions

decisions to the General Assembly of the Church of Scotland, which meets yearly at Edinburgh in May.

The Assembly consists of clerical and lay delegates from every Presbytery in Scotland, of lay delegates from all the royal boroughs, and from all the universities. It judges finally on all appeals from the sentences of Synods, which it may alter, modify, confirm, or reverse, or remit with instructions for further consideration. It likewise forms bye laws, in the nature of cannons, for the government of the church, and receives yearly reports from the directors of the fund of provision for the widows of ministers and professors. It is presided over by a moderator of its own choice, though a nobleman, termed commissioner, sits as representing the king, but without any prerogative of sanctioning or negativing its resolves.

Thus the Assembly may be considered as coming instead of the primate and convocation, the respective Synods as serving the functions of bishops, and their several courts, and the Presbyteries as answering the purpose of archdeacons and rural deans; and the whole forms a very ingenious model of republican church government, with perfect equality among its members, yet with regular subordination of authorities.

The judicial power, anciently vested in episcopal courts, of deciding on disputed marriages and divorce, in matters of scandal, and on testamentary dispositions, has been separated by law from the Church of Scotland, and is placed under judges called Commissioners, appointed by the crown. Of these there are 22 for all Scotland, each being judge over one ancient diocess; and a superior commissary court at Edinburgh, as the

consistary of the Primate, hears appeals from the inferior judges, and decides, in the first instance, in higher matters, especially of marriages and divorce. But appeal may be made to the supreme civil Court of Session and thence to the House of Peers.

SECTION III.—CLIMATE.

According to the plan for the reprinted reports, this section ought to have been arranged under the heads of 1, Prevalent winds; 2, Quantity of rain; 3, Other metereological tables. But the reporter is unable to give any distinct account of these particulars, because no metereological records, so far as he has been able to learn, are kept in the county. Should any such occur to him hereafter they shall be abstracted in the appendix. In default of these he offers a general view of the subject, according to the best of his experience and information.

1. In spring the prevalent winds are from the eastern points, and attended by much cold raw weather, and frequent frosts, though seldom of long continuance or peculiar severity, yet sufficient to blast the prospect of orchard fruit, and to delay very materially, and often suddenly to check the promise of early grass. This cold ungenial temperature is very apt to continue far into the summer, probably owing to the neighbourhood

of the ocean. But, from the vicinity of the same influence, the winters are seldom of very long continuance, or peculiar severity; certainly, however, more severe than on the west coast in the same latitude, but less so than in more interior situations. This influence lessens perceptibly in all respects at eight or ten miles from the sea; and the winters in the Lammermoor hills and Lauderdale are sufficiently severe and continued, though not more so than in the hills of Northumberland, or even of Yorkshire.

In autumn the prevailing winds are from the west, and often attended with injury to the standing corn by shaking, especially when harvest is protracted much beyond the equinox. Yet these winds are less hurtful, than when easterly winds prevail, accompanied by mists and close damp weather, by which the crops are often very much injured by sprouting in the stooks, or shocks, and even sometimes before being cut, if much lodged by previous rains.

2. The quantity of rain which falls on the average, or at different periods of the year, cannot be reported, as no metereological tables whatever have reached the knowledge of the reporter. But 15 years farming experience, with the farther knowledge derived from the occupation of a water mill, gives right to pronounce that the climate is, comparatively speaking, a dry one.

3. In the opinion of the preceding reporters the climate of this county is represented as unfriendly to agriculture. It may, perhaps, be so in comparison with some parts of the island considerably more to the south. But, from the experience of 15 years agricultural residence, and from a consideration of the rapidly improving state of the county, and of the well merited afflu-

ence of its intelligent tenantry, a very different conclusion seems fully warranted; and the reporter feels justified in asserting confidently, that the whole lower district, generally speaking, ripens its grain crops as perfectly, and very nearly as early, as any part of England north of the Humber. From the best information that can be procured, this county, in common with the whole eastern lowlands of Britain, enjoys a comparatively dry climate, much more friendly to the cultivation of grain, and to all or most other agricultural pursuits, than the lowlands on the western coast of the island. This aptitude of climate, in the eastern lowlands, for the cultivation of grain, turnips, and artificial grasses, extends north to the Murray Frith, in latitude 57° 40′ north, where wheat, oats, and barley are produced in abundance, and arrive annually at full maturity.

Confessedly, the hilly district of Lammermoor, and the higher parts of the southern slopes of the Lammermoor hills, called the moor edges, are greatly more liable than the lower part of the county to have the spring seed-time delayed and interrupted, and the harvest rendered late, difficult, and precarious. But they labour under these disadvantages in common with all such lofty situations, in consequence of the attraction of the hills for clouds and mists, and from the elevation necessarily inducing a considerably lower temperature of the atmosphere, by which the approaches of spring and autumn are delayed, and the season of winter not only commences earlier, but is greatly protracted. These disadvantages, however, are by no means greater in Berwickshire than in other districts of equal elevation, either in Scotland or England.

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The Merse, as already observed, is skirted on the north by the elevated range of the Lammermoor hills, and at some distance on the south, beyond the Northumberland portion of the vale of Tweed, by the more lofty chain of the Cheviot mountains; and these two chains are united, in a great measure, far inland by intermediate lower hills dividing the eastern from the western lowlands. Hence the clouds, wafted by the eastern gales from the British Ocean, are attracted from the vale between by these ranges of hills, which in spring and autumn are often enveloped in mist, drenched by rain, or cloathed with snow, while the lower intermediate Merse, and the rest of the vale of Tweed, generally enjoy the most genial seed times, and highly propitious harvest weather.

The spring season of grass is certainly later of commencing, and the lattermath, or autumnal pasture, ends earlier in this county than in districts considerably farther south. Yet neither of these circumstances can be considered as peculiarly unfavourable to agriculture, nor even to the grazing system, or breeding and fattening branches of husbandry, as they only give occasion to a little larger extent of cultivated herbage, in porportion to the live stock, to supply the longer interval of winter, particularly in providing a sufficiency of hay and turnips, which every farmer either provides for himself, or may procure for prices proportional to the produce and demand of the season; as many do not keep stock sufficient to consume the turnips and hay which they cultivate yearly.

In the late wet and ungenial season of 1799—1800, there is full ground to assert that the grain crop of Berwickshire was equally productive, as well ripened, and

as safely secured at harvest, on a fair comparison of circumstances, as in the best grain districts of England. This opinion is completely established by the high prices procured in the London market for Berwickshire wheat and oats, immediately after that unfavourable season and late harvest.

The crops on the high lands, or moor edges, did not indeed come that season to maturity, but in these situations, as elsewhere explained in this report, crops of grain are only preparatory for the culture of turnips and sown grasses.

There cannot be a more convincing proof of the favourableness of this county to agriculture than the fact of its farmers persisting, most successfully, to cultivate abundant crops of well ripened wheat after turnips, sown at all convenient times in the course of winter and spring, so late even as the end of March, and often a good way into April, according as the soil is left vacant by the expenditure of the turnip crop.

SECTION IV.—SOIL.

THE plan for the reprinted reports indicates a division of this section into five heads: 1, Clay; 2. Loam; 3, Sand; 4, Chalk; 5, Peat; and, lastly, to report the extent of each in acres, and the extent of waste land. Of these descriptions of soil there is no chalk whatever, very little real sandy soil, though abundance of sandy and

and gravelly loam, and no peat land is cultivated. There is abundance of land that may be reckoned waste, in reference to its worthlessness, but hardly any that remains unappropriated, or in a state of common waste; but this latter subject will have occasion to be resumed hereafter.

It would certainly gratify curiosity were it possible to ascertain the several extents of soils of various descriptions, in the county, as clay, loam, turnip soil, green pasture, whether natural or improved, heath, moor, moss, wood, &c. But as this cannot be done, nor even approximated, so as to serve any useful purpose, except by means of an expence which cannot at present be incurred, it seems altogether improper to hazard any estimate of these circumstances upon loose conjectural data. In illustration of this the reporter finds it beyond his power even to form such an account of these particulars as might be depended upon, of the estate on a part of which he has resided for the last 15 years, unless by means of an actual survey for the purpose, measuring, planning, and describing the estate of his landlord, and the farms of his neighbours. Even a map of that estate, as taken about 20 years ago, would now convey grossly erroneous information, in consequence of great improvements by the landlord and his tenants, and of extensive new plantations since made by the proprietor. Numerous portions, formerly useless bog or moss, or moor, are now converted into useful arable or pasture land, or are covered by thriving young plantations.

It may be safely asserted that a satisfactory survey and report of this county, containing any thing like an accurate cadastre or terrier, could not be completed under

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an expence of several thousand pounds, and probably half a million would not suffice to effect such an account of the united kingdoms as might be depended upon. Such being the case, at least in the opinion of the reporter, it would be idle to attempt giving here a view of the subject, upon which, confessedly, no reliance could be placed. It would require accurate surveys and judicious terriers, accompanied by full agricultural reports of every estate, farm, and possession in the county, carefully abstracted, to construct an account of this subject strictly consistent with fact.

Yet it may not be incurious or improper to exhibit the ideas which were adopted on this subject by two former reporters of the county. According to Mr Lowe, who has had much opportunity of extensive personal knowledge in his professional employment, the Merse district, including the vales on the Eye and Leeder, contained 13 years ago,

	Acres.
Under tillage, and cultivated grass	50,000
In pasture, bog, moor, moss, and wood ...	75,000
	125,000

And the Lammermoor district, including Lauderdale:

Under tillage	25,000	
Arable and green pasture	75,000	
Moor, moss, and wood	51,000	
		151,000
The whole county, in his opinion, extending to		276,000

In the subsequent report of the county, prepared and published by Mr John Home ten years ago, the soils

soils and circumstances are thus arranged and estimated, but on what data does not appear in his work:

	Acres.
Deep loam on the principal rivers	25,410
Clay lands in the *how* of the Merse	40,380
Turnip soil in the remainder of the Merse, in Lauderdale, Westruther, Merton, Nenthorn, Longformachus, and other arable parts, ...	119,780
Meadow, moss, and muir of Lammermoor and Lauderdale, including some arable patches, ...	99,870
Total contents of the county	285,440

It may be proper to remark that the term meadow, used by Mr Home, is a provincial name for green bog, or marshy ground, producing coarse grass, mostly composed of rushes and other aquatic plants, and that the word has no reference whatever to what is called meadow in England, which is here termed old grass land, and which is very seldom cut for hay in Scotland.

After these general observations, a cursory review of the surface and soil of the county shall be attempted. The Merse, or lower divisions, is comparatively an extensive plain, yet much diversified by frequent swells, and has several hills of some elevation interspersed, as at Lammerton, Dunse, and Home Castle; the two former being projecting spurs from the Lammermoor range, while the latter is an isolated lofty knoll. Lammermoor and Lauderdale are composed of an extensive range of lofty hills, dividing this north-eastern portion of the vale of Tweed from the expanded vale of Forth. These hills are mostly flat, or at least very obtuse on their summits,

mits, and not precipitous or rocky on their sides. They are every where intersected by a number of narrow upland vallies, or dells, through which the numerous feeders or brooks, that combine to form the Leeder, Whitadder, Blackadder, and Eye waters, wind towards the lower vale. The summits, in many places, extend into considerable flats, or elevated table lands, which often slope gradually to the lower vales, on the south sides of the hills, the higher parts being moor, but gradually declining into good land. The north sides of the Lammermoor hills are considerably steep, but, as belonging to the Lothians, require no particular mention here.

This county possesses every variety of soil, from the most stubborn clay, to the most barren sand or gravel, but none whatever of a chalky or calcareous nature. Along the banks of Tweed, Whitadder, and Blackadder there is an extensive tract of fine deep free loam, often upon a gravel bottom, sometimes upon a bottom of till, or coarse retentive clay. In this lower vale land there is likewise a large extent of stiff, and rather coarse, clay soil, usually cut off from the immediate vicinity of the rivers by the before-mentioned rich loam. A third species of soil, of a free and dry sandy, or gravelly consistency, occupies most part of the remainder of the Merse, the vale lands of Lammermoor and Lauderdale, and the lower slopes of most of the hills. This is denominated turnip soil, and is usually incumbent upon a dry bottom of gravel or sand. In every quarter of the county, frequently in the same farm, and sometimes in the same field, these three soils are intermixed in patches, or irregular stripes, of greater or less extent. All these graduate into each other, forming intermediate varieties; and a still farther source of variation, operating

ing almost indefinitely, is occasioned in all of them by the different nature of the sub-soils. Hence the extreme difficulty, or rather impossibility, of classifying the soils of the county and estimating their several extents. The soils, exclusive of peat, and independent of sub-soil, might be thus classified, but the estimation of their respective contents in the county is beyond the powers and knowledge of the reporter; 1. Clay; 2. Clayey loam; 3. Loamy clay; 4. Rich free loam; 5. Sandy or gravelly loam; 6. Loamy sand or gravel; 7. Burning sand or gravel.

The best soils are usually of a reddish colour, of various shades, most probably from containing a small admixture of oxid of iron. The presence of this colour is not an infallible criterion of fertility, though, when of sufficient depth and consistency, and incumbent upon a free sub-soil, such are generally productive. Neither is the absence of this colour to be considered as an indication of barrenness, for soils of almost any colour, which are sufficiently deep and retentive, and which have sound free bottoms, are fertile under good management.

A peculiar kind of soil occurs in many places, which is apt to deceive even experienced agriculturalists, having a fine free appearance, and often of considerable depth, but wanting consistency or tenacity, in other words, not having a sufficient admixture of clay in its composition to enable it to retain manure or moisture. This soil is provincially termed *deaf*, and is almost entirely composed of finely pulverized sand of various shades of brown, sometimes, especially when wet, almost black, like fine garden mould. This is most extremely infertile, and very speedily exhausts or consumes

sumes muck, or farm-yard manure. Under superior management, it may be brought to carry tolerable crops of turnips and grass; but the grain crops upon it are invariably false in the ear, and its grass is extremely liable to become quite dry, as if burnt up, in droughts of any endurance.

On the suggestion of an eminent agriculturist, it may be proper to mention, that the texture of the last described soil might be completely altered, and most materially ameliorated, by the application of a sufficient quantity of clay marle, which would ensure its future fertility. Yet, in general, little of that valuable substance is procurable in the immediate neighbourhood of such soils; and to carry the necessary quantity of clay marle from any considerable distance would be attended by an expence which could not be warranted by almost any degree of amelioration.

In every quarter of the county moors occur of greater or less extent, from several thousand acres to patches of two or three acres, and even considerably less than an acre. In the low country these are usually on the flat tops of the isolated or detached hills, but are often interspersed among the vale lands. They are composed of various kinds of soil, for the term moor is extremely vague in its use and signification. Some are of a thin poor clay, upon a bad till bottom; others of a thin surface of peat moss, wasted to a kind of black light earth, often mixed with sand, upon a sub-soil of impervious till, or a compacted clayey sand, apparently ferruginous, like a bad species of sand stone not perfectly lapidified. This peculiar species of sub-soil is provincially called *Moor-band*, and, like the coarse clay or till bottom, is absolutely impervious to water; hence, the thin superincumbent

incumbent peat soil is a soft mortar in wet weather, and becomes sterily dry in droughts of the most moderate continuance.

Another kind of soil called dry moor, found in many places, is composed of a thin sandy, or gravel soil, upon a free bottom. This is susceptible of cultivation and improvement, and is lessening every where by that means, where not too elevated on the Lammermoor hills, to defray the expence. When improved this becomes a turnip soil.

The hills of Lauderdale and Lammermoor are usually denominated the moors, and where unimproved are partly covered by sound short natural grass, forming excellent hill pasture for sheep that are sufficiently active and hardy for such exposed situations. Where of sufficient depth of soil, and not in too high elevations, these may be improved into tolerable turnip soil, and very much ameliorated as pasture land; and extensive tracts of this kind of moor have been so improved, or actually are under a course of improvement.

Other moor or hill lands are productive of a rank coarse grass, intermingled with various species of rushes, generally called bents and sprats, and with other marsh plants, which make tolerably good summer pasture for small black cattle. By judicious draining, and other means of improvement, the herbage of this kind of moor may be much amended, and even converted to healthy sheep pasture, or, by means of irrigation, might be made productive of hay, where that improving process is practicable.

Large extents upon the hills or moors are overgrown with heath, provincially named *heather*, *quasi* the heath plant; and some by furze or gorse, provincially called

whins. The value or fertility of such lands may be generally assumed, as in direct proportion to the vigour with which these plants grow. Hence, wherever they vegetate luxuriantly, improvement may very reasonably be expected to answer; and, on the contrary, where these are stinted and scanty in their growth, the soil may be considered as too barren to repay the expences of cultivation. Broom is a sure indication of a dry sandy soil, and sound free bottom; and where this plant grows tall, thick, and strong, if other circumstances are favourable, the soil may almost certainly be improved into tolerably good turnip and grass land. Ferns, like broom, affect deep dry soil, upon a sound bottom, and may therefore be considered an indication that the place of their vigorous growth is worthy of attention.

After judicious improvement upon tolerably good soil, heather never returns, unless the vegetative powers of the soil have been exhausted by over-cropping. But, after the most perfectly devised and well executed system of improvement, when land which formerly carried whins or broom is laid down to grass, the seeds of these shrubs, remaining in the soil, are sure to vegetate and to become troublesome. If left to themselves, they will soon again usurp the soil, even more abundantly than before it was cultivated and improved. But constant attention to pull up the seedling plants by hand, after rainy weather, when the soil is thoroughly drenched and quite tender, will completely eradicate these plants in a few years, and at a moderate expence, so long only, however, as the land remains in grass. When broken up again for tillage, the seeds of these shrubs, which still remain in the soil, and are again brought within the vegetative influence of the sun and air, and

weather,

weather, will now grow; and it will require the repetition of similar attentions, to prevent these new seedlings from usurping possession of the soil, in exclusion of the cultivated herbage. A long continued series of good tillage husbandry is necessary for effectually eradicating these plants, from land in which they have largely shed their almost imperishable seeds; imperishable in any known length of time, while buried in the soil, below the vivifying influences of the sun and air, but uniformly vegetating whenever these influences reach them, in consequence of turning them up by the plough.

In all free soils, numerous stones, provincially termed *land stones*, are found of various sizes, from the smaller gravel up to several pounds weight, and often in vast abundance. Such as are of considerable size have been removed, or are removing yearly, in the progress of improvement, to prevent interruption to the plough and scythe. Some are even of many hundred weights, and are called *sit-fasts*; and on some considerable extents of good land, recently improved, were in such abundance as to suffice for inclosing and subdividing the land which they formerly encumbered. The middle sized land stones are yearly gathered from grass lands intended to be mown, or from fallows, and constitute a most excellent material for filling hollow drains. When sufficiently broken, they likewise serve admirably for making and repairing public roads, instead of gravel, which latter article is rarely to be had in this county.

The free loamy soil, upon a dry bottom, usually affords similar stones, but not so abundantly as the turnip soils peculiarly so called. Moorish soils are abundantly liberal in the supply of stones to the roads; and the stones from these have mostly a singular whiteness of

their outer substance, somewhat resembling lumps of ill burnt lime-stone. This white colour of the land stones, is a most infallible indication of the moorish nature, and consequent infertility of the soil in which they prevail.

In many situations, even of the most fertile parts of the county, marshy places, or bogs, are found in the hollows, into which the water of springs or small rills are poured from the adjoining slopes. These are overgrown with rushes, or other marsh plants, and are inundated with water in rainy weather. Some of these larger bogs are of great depth, and seem anciently to have been lakes or ponds, now filled up with peat moss, owing to the long continued accumulation of decayed aquatic plants. In one of these, to be afterwards more particularly noticed, a considerable stratum of shell marle has been discovered at the bottom. Others seem to have been anciently the scites of woods, as the remains of trees are still found when digging for peats. Some bogs have little or no peat moss in their composition; and such, in various instances, have been converted into sound firm pasture, or good arable land, by judicious draining. Patches of various extents, of one or other of these bogs or marshes, are often found at the hollow parts of fields, or on the sloping sides of declivities, where different strata crop out to the day. But these are rapidly disappearing every where, in consequence of draining, one of the most efficacious and profitable improvements in agriculture.

It will be seen in various parts of the sequel, that very little of the land in this county remains in what is called a state of common waste; though a considerable range of various parts of Lammermoor and Lauderdale, and even

even some moors in the Merse, are of excessively little value: yet being all, or mostly, in absolute severalty, they do not fall in with the English idea of wastes, often applicable to land that might be rendered useful, if it were divided.

Peat mosses, or turf bogs, are found in all the hilly country, and in various patches through the low lands. These are used, in various parts, as supplies of fuel; but the culture of peat has not yet made its way into this country, so that it cannot hitherto be reckoned one of the Berwickshire soils. Dogden moss, near Polwart, is of large size, and may one day be tried for this purpose; in the mean time, it ought to be carefully examined to learn whether it be incumbent on shell marle. As fuel and manure, moss or peat will be noticed in the sequel.

SECTION V.—MINERALS.

1. SEVERAL fruitless endeavours have been made to discover a workable seam of coal in Berwickshire. In the estate of Lamberton, contiguous to Berwick bounds, at the south-east extremity of the county, a stratum of coal has long been known, which crops out on the sea banks near the fishing hamlet of Ross; and from which the fishermen of that place, and of several other fishing villages along this coast, have long been in use to supply themselves. At least one slight attempt was made, sixteen or eighteen years ago, to fit this coal for work-

ing; but, whether from want of knowledge or capital, or from the projector not being able to agree on terms of lease with the proprietor, it has never been brought to bear. It is said that the proprietor intends soon to give a more effectual trial, whether this coal may be worked to advantage, encouraged by the circumstance of an excellent new road, now making in its immediate neighbourhood.

2. An attempt was once made to dig for copper ore, at Ordwell on the Whittadder. But, either from want of produce, in proportion to expence, or want of skill in working, it has been long abandoned.

3, 4. No indications of lead, tin, antimony, or any other metallic ore, copper excepted, are known to exist in the county.

5. Some slight trials were made about 20 years ago of a ferruginous clay-stone rock, on the estate of Ayton, as an iron stone or ore of iron; but it was found too poor in metal to defray the expence of transport to Carron iron-works.

6. In some inland parts of the county, there are a few veins of limestone; but coals are so distant and expensive, that some essays to burn lime from these have been long abandoned, and all the lime used for building, or in agriculture, is brought from other quarters. Some appearances of slate are said to have been lately detected in two or three places of the hilly district; but time and trials are requisite to ascertain their quality. In the mean time, all the slate used in the county is imported at Eyemouth or Berwick. Bricks and tiles are manufactured on the lands of Paxton; and abundance of both of good quality are made in Berwick township, and at Tweedmouth, on the opposite side of Tweed.

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Hitherto, the county is dependant on its neighbours for the two great articles of domestic comfort and agricultural improvement, coal and lime. Coals are brought from the south side of the Tweed to all the south and east parts of the county, and from Mid-Lothian into Lauderdale. The most north-easterly corner is supplied from Dunbar harbour, where they are imported mostly from Fife. Lime follows nearly the same roads; except that some of the north and east parts of the county procure it from kilns in the vale of East-Lothian. Both coals and lime are imported at Eyemouth for supplying the county within a moderate distance of that port, but more especially lime, which is in such demand, that a sufficient quantity cannot always be had from the kilns on the south of Tweed. The coals imported at Eyemouth come from the Firth of Forth, and from Newcastle and Sunderland. Lime from the river Wear, and from North Sunderland, near Bambrough castle. Coak, or charred pit coal, for brewers, maltsters, and corn merchants, is likewise imported at Eyemouth from Newcastle.

Inferences *a priori*, from the general nature of the prevailing strata, are altogether insufficient to warrant any expensive researches for concealed minerals. But the general principles of mineral surveying are not difficult or mysterious; and a preliminary search could not be attended with much expence or trouble, as only requiring the deliberate travel and careful examination of an experienced person, up the straths and dells or narrow vallies, of the numerous mountain streams, where, in a vast variety of places, the bare extremities or crops of strata and veins will be found exposed to the day.

7. Clay marle was once largely worked in various parts of the county, especially along the banks of the Whitadder and Blackadder; but this manure, which operated some of the earliest permanent improvements attempted here, has, for many years past, almost entirely given way to the use of lime, owing to the very large quantities of clay marle which were found necessary for being efficacious, and its heavy carriage and expence, and to the much quicker operation of lime, and its consequent more speedy return of outlay and profit. As the use of clay marle has been long laid aside, the reporter has no personal knowledge or experience of its usefulness; but is enabled to state, from authentic information, that extensive tracts, of what is now moderately good and useful tillage and grass land, were by it reclaimed from poor and thin soiled moorish wastes. By reference to English reports and agricultural publications, this kind of marle, and the mode of using it, has much the appearance of being analogous to what is termed claying in various parts of England; and, like the English clay, was invariably found of better quality at considerable depths than when taken from near the surface; probably from the deeper parts of the beds or strata containing a larger admixture of calcareous earth. The Berwickshire mode of working was always by open quarries, often on the banks of rivers; never by the very ingeniously imagined pits, central for every field, and filled again when out of use. The subject will be resumed under a subsequent division of the report. It may be proper here to remark, that some Lancashire soldiers, marching into Scotland, discovered clay marle in the burn or rivulet near the Press inn, which they affirmed would be very valuable in their own country.

6.

8. In many parts of the county, shell marle has been found in small quantities. In the western parish of Merton, on the estate of Hugh Scott, Esq. of Harden, a stratum of near an hundred acres has been discovered below a thick bed of peat moss, and now supplies a rich fund of improvement to a portion of the country that is very distant from lime. The subject will be farther considered in the sequel.

9. Stone quarries of various kinds are found abundantly in almost every quarter of the country. Trap whinstone, and amorphous bassalt, interspersed with most irregularly stratified clay stone, are almost universal. These often graduate into each other, and are often intermixed, in their imperfect, irregular, and troubled stratification, with a half lapidified tough and compact clay, called *leck* by the quarriers, which soon loses its tenacity by exposure to frosts, and crumbles down to mere plastic clay. It has a shelly structure and soapy feel, and is, perhaps, steatitic. The harder rocks are interspersed, in every direction, by drys or fissures, and by thin cross branching veins of quartz. In several places, rocks of breccia, or coarse pudding stone, are found. The most remarkable instance of this, is the rocky promontory which covers Eyemouth bay, on the north-west, in which nodules of whin and scist, of great variety of size, form, and colour, are imbedded in lapidified clay, somewhat like steatite, of various colours, often greenish, generally very hard and tough, but soapy to the touch. The durability of this stone is thoroughly ascertained, as the outer pier of Eyemouth harbour has been above 30 years exposed to the fury of the German ocean, without the slightest apparent waste; and it is built of this stone without cement of any kind.

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In many places, large extents of silicious sand-stone, or free-stone, occur in regular stratification. Some of these are of a coarse open grain, so as to serve tolerably well for filtering stones. Many of the quarries are of excellent quality; and perhaps there does not exist a finer specimen of that kind of stone, than is exhibited in the magnificent ruins of Melrose abbey, in the county of Roxburgh, only about two miles from the western borders of Berwickshire; in which exquisitely rich and delicate carvings in high relief, that have been many centuries exposed to the weather, are still sharp and uninjured. From comparison of grain and colour, a pale red almost peach bloom, there is every reason to suppose that beautiful structure had been supplied with stone from Dryburgh upon Tweed, within this county.

Along the shores of Lamberton estate, contiguous to Berwick township, there are extensive strata of free sand-stone, from whence blocks of any size could be procured, and in sufficient quantity to build several large cities. From vast masses of this, which have tumbled from the impending crags upon the sea beach, Eyemouth has been long supplied. By means of one or more piers or break waters, any quantities might be shipped in good weather at a very inconsiderable expence.

Generally speaking, the whole county is so abundantly supplied with stone of various kinds, that almost every building in its whole extent, down to the meanest cottage, is constructed of that material, mostly disposed in a very irregular species of rubble work; but which, when honestly built, with a sufficiency of good and well mixed lime mortar, becomes almost indistructible by any known length of time.

SECTION VI.—WATER.

1. EXCEPTING the Eye, with its scanty tributaries, which falls into Eyemouth bay, and a very small number of inconsiderable brooks that run separately into the sea, all the streams of Berwickshire contribute to swell the waters of the Tweed. This fine river is only navigable for sea vessels to Berwick bridge, about one mile from its mouth, though small vessels and barges might go with the tide several miles higher; which, however, is very seldom done. The other streams in the county are usually denominated *waters*; a kind of intermediate provincial term, between the dignity of a river, and the insignificancy of a brook, which latter is called a burn in Scotland. Still smaller rills, especially in marshy places, are often called *sykes*.

The Leeder, or Leader, with its numerous *burns* or streamlets, winds through the vale of Lauderdale, and issue from a number of narrow upland dells or vallies, among the wild hills of that district. It joins the Tweed at the south western angle of the county, where that river begins to form the south boundary of Berwickshire. During its course of about 17 miles, the Leeder drives a number of *grist* mills, which manufacture oatmeal, chiefly for contributing towards the supply of Edinburgh and its environs, by the intervention of a weekly market at Dalkeith in Mid-Lothian.

The Whitadder and Blackadder, *quasi* white and black waters, owing to their respective tinges when in flood, are next to exclusively Berwickshire streams.

Dye,

Dye, one of the main sources of Whitadder, rises by several brooks or feeders, on the ridge of hills which separate Lauderdale from Lammermoor. The peculiar Whitadder, rising within East Lothian, unites with Dye in a romantic sequestrated vale of some extent, in the bosom of the Lammermoor hills; and, having received the Blackadder much lower down, in the vale of the Merse, unites with the Tweed within Berwick bounds, about three miles from the sea.

The Blackadder and its streamlets, or feeders, rise from the southern slopes of the Lammermoor and Lauderdale hills; and, after winding through the vale of the Merse, joins the Whitadder between Allanbank and Ninewells. The small stream of the Eden principally belongs to that portion of Roxburghshire which indents into this county, on the north side of Tweed, into which that small river flows a few miles below Kelso. The Leet, another small stream, belongs entirely to the how or hollow of the Merse, and joins Tweed at Coldstream.

The small river Eye, with a few feeders, particularly the Ale and Horn, waters a narrow but fertile vale, in the east end of the Merse; and several of its upper streamlets wind among some narrow vallies towards the west end of the Lammermoor hills. Its peculiar source is within East Lothian. At one place, from near Ayton, to near Chirnside, a narrow winding vale, of very inconsiderable elevation, almost permits the Whitadder and Eye to unite. Midway between, Billy bog, or Billy mire, discharges its superfluous waters into both rivers. Eastwards, by the Horn burn, into Eye, with just sufficient declivity for its ready passage; westwards, by the Billy burn, into Whitadder, having one fall in a much shorter course, which drives an overshot grist mill.

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This singular vale is about five miles long, and has a northern branch, more elevated, from Achincrow on Billy bog, to Reston on the Eye, inclosing an isolated hill of considerable extent and elevation, but altogether arable.

The Ale, Wedderburn, and many other *burns* or brooks, are too inconsiderable to require any special notice. All the rivers, waters, and brooks abound with trout of different kinds; some contain a few pike and perch, and all have plenty of eels. The Tweed abounds with excellent salmon and gilses, and great variety of fine trout. Some salmon, and not many of the best kinds of sea-trout, ascend the Whitadder and the other Berwickshire streams.

2. There are no lakes, provincially called *lochs*, of any importance in the county. Coldingham loch, and one or two more, are too insignificant to form exceptions, and do not merit any particular notice.

3. There are no fish ponds of any importance, and ponds or pools, for supplying cattle with drink, are too few and too inartificially constructed to deserve being in any way particularised.

4. Dunse spaw was once in some little repute as a mineral spring, but has fallen into such complete neglect, that no account can be procured of its nature and properties. No other mineral springs have excited any notice whatever. Springs of water for domestic and farming use abound every where, except in the vale of the Merse, where they are mostly distant, and often scanty.

Generally speaking, Berwickshire is amply supplied with water, for every agricultural and domestic purpose, and for driving mills for its own internal use, and

and the uses of manufactures. Numerous falls remain unoccupied on several of its rivers, which may be applied hereafter to manufacturing purposes, when the increase of capital shall have taken full effect in improving the soil to the utmost, and the sons of farmers, obliged to look out for other lines of industry, may be induced to adventure in manufactures. In all its upper and midland districts, the county is most abundantly furnished with numberless springs and brooks. But in the extensive and valuable vale district, called *the How*, or hollow, of the Merse, its distant and scanty brooks are apt to become dry, during long continued droughts, and its springs to cease flowing even for months. On such occasions, which are not uncommon, the inhabitants are often reduced to great difficulties to procure water, which they have to carry from considerable distances for household purposes, and are often obliged to drive their cattle and horses several miles to procure this necessary article. In that district pit wells and tanks, or reservoirs for rain water, ought to be dug in the vicinity of every farm yard; and deep ponds, or watering pools, ought to be constructed in proper situations to supply the pasture fields.

5. The vicinity of the sea, at the eastern extremity of the county, is highly beneficial, by facilitating the transport of its surplus grain and wool, and of its scanty manufactures, chiefly from the port of Berwick, and by admitting some importation of coal and lime exclusively at Eyemouth. The principal supply of timber, iron, and other foreign articles, and of all kinds of merchant goods, depends upon Berwick.

As a sea bathing quarter Eyemouth is but thinly frequented, though a few bathers are to be found there every

every season. Indeed it is not very well calculated for this purpose, even in respect of accommodation. Its shores are too steep and exposed to surf for the employment of machines; and the beach is composed of loose shifting gravel, a very disagreeable substitute for sand. In Coldingham Bay there is some fine sandy beach, well adapted for sea bathing, but the village of that name hardly affords any comfortable lodgings, and such as it has are at a very inconvenient distance from the sea shore.

The supply of sea weed for manure, and for manufacturing into kelp, is very limited upon this coast. The subject, so far as it relates to manure, will be resumed hereafter, but the circumstances relating to kelp will be found in reports of the Orkneys and the West Highland districts, where that article is of very material importance. The fisheries, both in the sea and in rivers, will be noticed in Chap. XIV. Sect. IX. of this report.

CHAP.

CHAPTER II.

STATE OF PROPERTY.

SECT. I.—ESTATES AND THEIR MANAGEMENT.

THERE are no very large estates in Berwickshire, as limited to the county, though several have become of great value, and some that are connected with estates in other counties, of very considerable magnitude. Twelve or 13 years ago Mr Low estimated that hardly any of its estates exceeded L.5000 of yearly rent. That circumstance must now be very materially altered in consequence of the rapid rise of rents since he wrote, and the limitation might probably be now extended to nearly double that amount, or from L.8000 to L.10,000 a year; but the reporter has no data on which he can depend for ascertaining this circumstance, and is not inclined to hazard assertions on vague information. In the year 1795, according to the cess roll or land tax book of the county, its lands were then unequally di-

vided among 294 proprietors, of whom only 14 held under the limitations of entail. At that period, according to the report of Mr John Home, and circumstances have not since materially altered, the relative valuations of these properties were classed thus :—

	Number of Properties.
Valued below L.100 Scots	141
From L.100 to L.400 Scots	66
From L.400 to L.1000 Scots	41
Of L.1000 Scots and upwards	46
Total number of proprietors	294.

For the information of English readers it may be proper to explain, that the valued rents, both in this county and in all Scotland, denote an estimation or rent roll, which was formed soon after the revolution, for the express purpose of apportioning the cess, supply, or land tax; and which valuation has ever since continued the invariable rule for that particular purpose, and for levying several other taxes, county and parochial, as will be explained hereafter. The commissioners of supply, or of the land tax, in Scotland, have no power of revaluing, or making out a new rate, or of altering the old valuation in any respect; except that when properties become divided or accumulated, they can divide the valuation of any land among the portions into which it has been split, and they can accumulate into one sum the respective valuations of several properties that have become united under one proprietor.

Besides apportioning the payment of the supply, cess, or land tax, upon each proprietor, according to the valuation of his lands, these necessary changes serve to ascertain the rights of freeholders to vote for represen-

tatives of the county, which right is limited to those who enjoy a freehold property in liferent or fee, extending to L.400 Scots of valued rent or more. The right of voting likewise attaches to properties that can be shewn to have been retoured at any former period, as amounting to a forty shilling land of old extent; a circumstance in legal antiquity which shall be endeavoured to be elucidated in next section. All freeholders, possessing L.100 Scots of valued rent, or more, are qualified to be commissioners of supply or land tax, and to act as trustees of the post roads, turnpikes, and parish roads.

Without pretending to enumerate the landed proprietors, or even to discriminate the principal ones, the noble families having estates in Berwickshire may be mentioned. The ducal family of Gordon derives its name and chief titles from the lands of Gordon and Huntly in this county; but since acquiring their princely estate and residence in the north, to which they have transferred these names, they have given off their ancient Berwickshire estate in feu, retaining the superiority only. The Dukedom of Roxburghe, now under abeyance and litiscontestation, has a shooting lodge, and some sheep farm lands of small comparative importance, in the bosom of the Lammermoor hills. The estate and residence of the Earl of Home is at the Hirsel, near Coldstream. Those of the late Earl of Marchmount, the succession to which title is now under legal claim before the House of Peers, at Polwart or Marchmount house, near Greenlaw. The Earls of Buchan, Lauderdale, Wemys, Haddington, Braidalbin, and Roseberry, and Lord Douglas of Douglas, have all estates in the county, but their residences and principal estates

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are elsewhere. In the enumeration of the mansion houses a considerable number of the other proprietors will be mentioned.

Many of the landed gentlemen reside upon their estates, either principally, or at least occasionally, and cultivate a portion of their own lands for conveniently supplying their families and stables. Some even pursue the practice of agriculture extensively, with great spirit and judgment. There cannot certainly be a more rational, or more continually varying and amusing occupation of time, for the retirement of a country gentleman, than the detailed superintendance of agricultural pursuits, united with attention to the improvement and embellishment of his estate, by inclosing and planting. Without this healthful and interesting employment, a man of keen mind and independent fortune, residing in the country, must resort to the less rational amusements of hunting and shooting, or to the dull pursuits of angling, to occupy his vacant time.

A considerable number of farmers in this county have become proprietors of respectable estates, acquired by their own, or their fathers successful and enlightened industry; and they still continue to exert upon their own lands, and on farms belonging to other proprietors, the same unremitting judicious attentions, by which they, and many of their brethren, have realized handsome independencies. Indeed farming, at least in this and other improved districts, is not now to be carried on, either for the interest of landlord or tenant, unless with the command of a respectable capital, and directed by ingenious and persevering industry.

It has been reported of a great landed proprietor in a distant county, that he expressed high indignation on

hearing that one of his tenants had bought a small estate. Supposing doubtless that on such occasions the tenantry must have enjoyed profits from their possessions, which, under other circumstances of management, might have gone into the coffers of their landlords. But our more enlightened Berwickshire proprietors know well, were their tenantry to have insecure holdings, and to be always racked to the utmost possible payment, they could neither improve their farms, nor acquire any opulence, and consequently could not give large advances of rent upon every successive lease, to enrich their landlords. Were it possible to reduce the present affluent and intelligent race of farmers, to the miserable situation of our ancient *teinders* and *thirders*, or of the *metayers* in many parts of the continent, instead of thereby adding to their own riches, proprietors would reduce themselves to deserved beggary, along with their oppressed dependants, and, if universally followed, would involve their country in certain ruin. In this report the connexion between English landlords and their tenants at will, and the consequent necessary imperfection of husbandry, wherever that system prevails, cannot be taken into consideration; yet it may be allowed to say, that such tenantry never can improve the land to the utmost, and can never, therefore, afford to pay the full rental value for which their possessions would let, under the security of leases of reasonable endurance.

The management of landed estates in this county is extremely simple. Generally, around the residences of proprietors, and in the neighbourhood of towns and villages, there are a number of inclosures in old grass, which would be termed meadow in England, but which

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are here universally appropriated to pasturage. Excepting what may be necessary for the use of the proprietor, these are let from year to year, generally by public auction, and their use limited to the pasturage of horses, sheep, and cattle, excluding stallions, bulls, diseased beasts, and known fence breakers. The takers may lay on their stock to graze as early in the season as they think fit, and are bound to evacuate the fields by Martinmas or Christmas, or some other fixed period, intermediate between these; and they usually have to grant bills for the rent or grass mail, payable at the end of the grazing season, with satisfactory caution, or security, for due payment. The proprietor upholds all gates and fences, and causes a person to view the stock frequently, to prevent strays and accidents, as the takers often live at considerable distances.

All circumstances relative to landed estates in this county, in the connexion between landlord and tenant, being perfectly simple, the management, in that respect, is extremely easy. Resident proprietors usually draw their own rents, and those who live at a distance employ a *factor*, or agent, to receive them. Indeed, so simple is this branch of business, that one factor often draws the rents of many distinct large properties, and carries on other business. In some cases the tenants transmit their rents by bankers bills to distant landlords. Farmers are never teazed by the prying impertinence of bailiffs, endeavouring to discover some oblique clause in the lease, that may bear a strained interpretation, adverse to the practices that have been followed with good faith by the tenant. Proprietors and tenants live in harmony and mutual good will, the rents of the former progressively advancing with the improvements of

the country, and the fortunes of the latter augmenting continually, by industrious and judicious attention to improved agricultural practices, and to the amelioration of live stock. This is a situation of reciprocating interests and advantages, which in general cannot be altered for the better, and which every well wisher to the prosperity of agriculture, and of the country at large, must anxiously desire to remain permanent, and to extend over the whole united empire.

By law the landlord pays the whole of the old land tax or *cess*, where not redeemed, and the ministers stipend, or that portion of the universally impropriated tiends, or tythes, which are allocated for the support of the ministers of the established church. He likewise pays half of the very small tax appointed for the salary of the parish schoolmaster, and half of the light assessment which is levied for supporting the parish poor. The tenant pays the other half of the two last mentioned trifling taxes, and the whole of the conversion money instead of statute labour, due from his possession for repairing the parish roads, which is likewise paid by landlords, in so far as they may occupy or cultivate their own lands. Sometimes the tenant is bound, by special bargain, to pay the landlords portion of all, or parts of these taxes, in addition to his own. The whole burthen of building and repairing churches, and manses, or personage houses, and of school rooms and schoolmasters dwellings, falls by law upon the landlords.

As the property tax is general over the whole island, in its operation upon landlords and tenants, it does not seem necessary to take any particular notice of it in this report. It may, however, be mentioned that while agriculture continues to flourish, as it has done for a number

number of years past, in a rapidly progressive state of improvement, the farmers may be able to pay their proportion of this tax, and their progressively encreasing rents, without injury. But should times disastrous to agriculture recur, such as happened during the latter years of the American war, when the price of farm produce, for a series of years, fell greatly below a fair average, this tax may eventually become intolerably oppressive, and even widely ruinous. Yet, trusting to the wisdom of the legislature, and of the ministers of the crown, to watch over the interests of so numerous and valuable a portion of the community, on whom the increasing wealth of their own orders, and the prosperity of the state, so very essentially and primarily depend, it does not seem fitting to enlarge on this subject, though, in an agricultural report, some observations may be permitted, which are here offered with all deference and respect.

It cannot be overlooked, that the system by which the property tax is assessed upon farmers, does not appear to be equitably parallel to that which regulates its exaction upon the other classes of the community. For farmers, the utmost stretch of their rents, or the utmost valuation which their lands would bear, in prospect of a new lease, is assumed as the measure for their payment. In this way, they are made to pay a large per centage upon a presumed income, of which they very often do not enjoy a half, a quarter, or an eight part, more especially during the first five, six, or seven years of a new lease, upon a farm that requires extensive and costly improvements. So far from a farmer, in such circumstances, enjoying any income, commensurable by the amount of his rent, it often happens, that to pay rent,

wages, and taxes, to maintain his family with the utmost frugality, and to improve his land, he has to expend for several years from his capital, or by means of borrowed money, a sum little, if at all inferior, to his actual rent, often much larger. In this case, certainly, and until his debt, or capital, is replaced, from the excrescing produce of his farming improvements, he may be fairly and equitably pronounced to have no property producing income, that ought, in justice, to become the subject of taxation, upon the general principles of the property tax, as applicable to all other descriptions of subjects. Upon a farming concern of the above description, carried on by a copartnery, there certainly could be no profits to divide, so long as its affairs continued in the predicament here founded on. The farmers proportion of the property tax ought to be levied upon his actual profits, precisely as in the cases of manufacturers and merchants; and surely a merchant or manufacturer, who has adventured a large capital upon a distant voyage, would not be assessed to the property tax on that adventure, until the returns of the proceeds had produced an actual profit.

Farmers, like all other men engaged in business, besides the differences already mentioned, and those which arise from adverse seasons and fluctuations of markets, are liable to losses in trade from the bankruptcy of corn-dealers, butchers, wool-buyers, and jobbers in sheep and cattle. But by the present principles of the property tax, as applicable to them, they are compelled to pay as much under the most adverse circumstances, even though tottering upon the brink of ruin, as when their affairs are prospering to the utmost of their wishes. All other descriptions of the subjects

subjects are exempted from the property tax under such circumstances of loss, in so far as these tend to diminish or annihilate their yearly incomes.

Three hypothetical cases may be stated, for which parallels may be found, with infinite intermediate gradations, in most thriving agricultural districts. A. B. towards the close of an advantageous lease, pays L.1000 a year of rent; his farm is valued for the property tax at L.2000, and he perhaps derives L.1500 a year profit from his farm. C. D. has entered to an improved farm at L.2000 a year of rent, and perhaps clears L.500 a year of profit. E. F. has taken possession of a farm at a rent of L.2000 a year, requiring extensive improvements, from which he can derive no profits whatever for several years, and on which he must expend perhaps L.5000 of capital before he can possibly look even for the commencement of reimbursement, far less for any actual profit. All these three, however, are chargeable to the property tax, upon similar hypothetical principles of presumed profit; while in strict equity A. B. ought to pay three times as much as C. D. and E. F. ought to be exempted. Such unquestionably would be the relative situation of these three, were they merchants, manufacturers, or West India planters, in similar circumstances as to profit.

SECTION II.—TENURES.

THE divisions of the new plan for this section do not assort with the circumstances of Scotland, in which copy-

copyholds and church leases are not to be found. The reporter has found himself, therefore, under the indispensible necessity of pursuing a different arrangement, more suited to local circumstances. The tenures of land in Scotland are few and simple; yet, as the subject belongs to the science of law, and the practice of conveyancing, only a very general and popular account can be presented to the reader, which even is ventured upon with diffidence. But the subject is curious, as shewing the difference in this respect between Scotland and England; and as the reporter does not know of its having been treated of in other Scots reports, he has been induced to extend the observations to some length.

1. *Freehold Property.*

As a remnant of the feudal system, all the lands in Scotland are theoretically considered as the property of the Crown, or of the Prince as heir apparent, who anciently possessed a very extensive territorial appanage. By these personages almost the whole has been parcelled out among the subjects, by grants that seem only in liferent, but are really perpetual; and all proprietors, who hold their lands directly from either, are considered as freeholders, or tenants in chief. In pursuance of this legal system, or fiction of law, every successive proprietor, whether by entail, heritage, destination, purchase, or adjudication, must nominally *resign* his whole lands to the crown or prince; in consequence of which, a new charter or donation is granted of course from the Exchequer of Scotland, on payment of the regulated fees, and of the tax to which the various reddendos are reducible, by fixed rules of office. Upon alienations,

ations, the purchasers, or singular successors, have farther to pay a sixth part of the valued rent, at which the lands are rated in the cess roll, or valued rental book of the county in which they are situated.

The first circumstance in the transmission of property, is the disposition or deed of conveyance; which may either be immediate, as in cases of sale or donation, or eventual for succession after death. Or an heir may take up a succession by service and retour, in default of disposition or settlement, or creditors may adjudge as a species of executors. In whatever way the property may have descended or been transmitted, it requires to be rendered valid or completely effectual by charter, infeftment, and sasine; of which some account shall now be given.

Consequent upon the charter, a formal act of symbolical conveyance and occupancy called infeftment, or feofment, must follow; which is executed by delivery of earth and stone of the property upon the spot, from a representative or supposed mandatory of the granter of the charter, into the hands of the attorney of the grantee, in presence of a notary public, with whom the receiver of the infeftment lodges a formal instrument of protest. The deed of attestation of these formalities by the notary who conducts the ceremony of this investiture, is called the sasine of the lands, and must be immediately recorded, either in the special register of the district, or in the general register of sasines, in the national record office at Edinburgh; by which registration the feudal investiture is perfected.

In many instances the original grants, from the crown or prince, have been given under certain stipulations of service or payment, called the reddendo of the charter.

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Some of these are whimsical, as so many blasts of a horn, a rose, a pepper corn, a pair of spurs, a penny Scots, or the like; which are all called or considered as blanch or free holdings. In others the reddendo stipulates for a small yearly payment in money. All these, however, are illusory, and are only payable if demanded; and they are all considered and held as the reddendos of blanch or free holdings, the only species now legally existing from the crown or prince, whatever may have been the ancient conditions of the grants. In the exchequer, all these are now calculated by fixed rules of conversion into money, and are brought to account on granting new charters, and must be paid up along with the fees of office.

Ward-holding and military service were finally abolished by statute so late as 20 Geo. II. c. 50. which provides, that all such holdings shall be converted into blanch in freeholds, on lands held of the crown or prince, and into feus in lands held from subjects superior. These last, to be explained in the sequel, generally pay a valuable consideration, either in money or grain, or both, in name of feu-duty. When stipulated in grain, it is converted yearly into money, according to the annual fiars, or average prices of the year, which will be explained hereafter.

When the lands only are contained in the charter, they remain liable to pay the free tiend to the titular, or lay improprietor; or, in defect of a direct titular, so constituted by particular grant, the patron of the parish has a general legal right to receive the free tiends. In this defective state, the proprietor is said technically to possess only the stock of his lands, while the tiends of that stock belong to another person. But when the

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tiends are likewise expressed in the grant of the charter, the proprietor is only bound to pay so much out of the tiends, as is or may be allowed as stipend to the minister of the parish. In numerous instances advantage has been taken of this general law right, to acquire surreptitious rights to the tiends, and to have them inserted in subsequent investitures. After forty years unchallenged possession, under charter, infeftment, and sasine, these became good rights, unless specially reduced by action at law, grounded upon the exhibition of prior direct rights. But the general law right of patrons, unsupported by especial deed or record, completely abates to these new rights, after the elapse of legal prescription.

Every species of debt, security, or provision, affecting real property or land, must be rendered complete, by means of infeftment and sasine, as before explained, in the name of the person to whom the debt or security or provision belongs, and the sasine must be recorded. Hence the person becomes seized, or infeft, or is put into symbolical possession of the property; and cannot be dispossessed through the operation of any posterior deed or act of property whatever. Hence too, under proper precautions of searching the registers for incumbrances, all bargains of sale or loan or otherwise in landed property, or connected with it, are entirely free from the danger of abatement or injury from prior claims: as, on competition, all claims are ranked upon the property in direct progression, according to the respective dates of the several recorded sasines. Debts thus secured are termed heritable, and are analogous to mortgages in England. All other debts or claims whatsoever are considered as merely personal, and are postponed

poned to all the former; and all of the latter come in *pari pasu* upon the remaining funds.

Persons having personal claims against proprietors of lands, may effectually prevent the dilapidation or abatement of their general rights, by suing out a particular writ or process of inhibition or injunction against the debtor; which being likewise recorded in a particular register of inhibitions, prevents any posterior real incumbrance from being contracted to their prejudice; as no valid act of property can be exercised until the inhibition is legally removed.

Many estates that belonged to the abbeys of Scotland were granted away by the abbots about the time of the reformation, under perpetual feu-rights, to laymen and their heirs or disponees, subject to reserved rents, or feu-duties, and other feudal prestations. After the full establishment of the reformation, and consequent dissolution of the abbeys, the whole remaining rights of the abbeys were vested in the crown; by which subsequently, these were all granted away in temporal lordships to subjects, who were termed lords of erection. But as, by law, no person who has once held directly of the crown, can be compelled to become the vassal of a subject so far as the same lands are concerned, all those who hold original feus of abbey lands are placed by law in the full enjoyment of the rights and privileges of freeholders, and are intitled to crown charters, with consequent infeftment and sasine; but remain liable to pay the reserved rents and dues and casualties of the original abbey feus to the lords of erection; which rights are preserved in the new crown charters, by the clause of *salvo jure cujuslibet*.

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The particular rights of freeholders are, to be electors of members of parliament for the county, if their individual freeholds extend to L.400 Scots of valued rent or more, according to the cess book; or if their lands can be shewn to have been retoured as 40 shilling lands of old extent or more. The valued rent is a modern estimation of the whole lands of Scotland, made after the revolution for apportioning the payment of the cess, assessment, or land tax, as formerly mentioned in the first section of this chapter.

Several ancient valuations of the whole kingdom of Scotland, called *extents*, took place at different periods, for the purpose of fair apportionment of revenue upon particular occasions. One of these, supposed to have been made in the reign of Alexander III. who died in 1286, has long been believed to be what is meant in ancient retours, under the particular denomination of the old extent. But, from more accurate investigation, it is now ascertained that the *old* extent must be looked for in considerably more remote antiquity. It is mentioned in the reign of Alexander, under the name of *antiqua taxacio*, *antiquus census*, and the like, which never could allude to a recent valuation. Besides, no event happened during the reign of Alexander that could give occasion for any extraordinary aid to the crown. The high probability, almost amounting to demonstration, is, that it was made in the reign of William the Lion, about 1189, when Richard I. of England restored the independency of Scotland for a payment of 10,000 merks Sterling, a great sum in those days.

As new extent was taken of the whole lands of Scotland in 1365, or 1366, when a tax was imposed to pay the

the ransom of David II. the degenerate son and successor of the heroic Robert I. So very greatly had the state and circumstances of Scotland become deteriorated by the ruinous wars with England, consequent upon the death of Alexander III. that while the *old* extent, emphatically said in record to have been taken *tempore pacis*, a peace which lasted almost 200 years, produced a revenue or subsidy of about L.46,500; the *new* extent, taken *tempore belli*, a miserable war which continued, with few intervals of hollow truce, from 1286 almost to the revolution in 1688, could only produce about L.23,000, or less than half.

As a contrast to these disastrous times, it is peculiarly pleasing to record the recent picture of renovation, produced by the blessing of providence, in uniting the two long contending nations of this island under one Sovereign, and by the wisdom of our ancestors in bringing about the glorious revolution, and the excellent act of union. Such was the miserably exhausted state of Scotland, at the time of Oliver Cromwell, that its whole public revenue did not amount to L.40,000; while in 1801, the public taxes paid by the same country were little short of L.2,000,000, about 50 times their former extent, and certainly collected more easily, and paid with much less distress to the subject. They are now much more, but the reporter does not know their exact amount.

In 1695 a nominal capital of L. 100,000, only L.30,000 of which was real, belonging to a solitary bank at Edinburgh, sufficed for all the necessary accommodations of Scots commerce, manufactures, and agriculture. Repeatedly attempted branches, at Glasgow, Dundee, Montrose, and Aberdeen, then and now the principal

provincial sea port towns, were withdrawn, because unable to defray the necessary expences. In 1808 three public banks at Edinburgh employ considerably above L.2,000,000 Sterling of capital, nearly 70 times the original amount; these have branches in almost every corner of the country, besides numerous private bankers at Edinburgh, and banking companies in every provincial town of any importance; several of these private establishments have ten times the original real capital of the bank of Scotland at its commencement.

In 1656 the whole tonnage of Scots shipping was only 2724 tons, while in 1802 it extended to 94,276, nearly 40 times the original amount. The population of Scotland, so recently as 1755, was 1,265,000 individuals; whereas in 1801 it certainly reached 1,610,000, an increase of 345,000 in 47 years, near 20 of which were years of war. These incidental observations have forcibly obtruded themselves, though not directly in point, yet are too gratifying to be omitted.

Such freeholders as have property amounting to L.100 Scots of valued rent, or more, are qualified to be commissioners of supply, or of the land tax, and are usually nominated trustees, *de facto*, in turnpike bills. The higher denomination of freeholders, who usually get that appellation exclusively, have, of course, all the rights of the latter order. Peers enjoy all the rights attached to their landed property, except that of voting at elections for members of the lower house of parliament. Freeholders below L.100 Scots valuation, and proprietors of feus, are all denominated heritors, and have a right to attend all meetings of the county not connected with election or supply, and all parochial meetings.

The large properties in Scotland are erected into baronies, somewhat equivalent to manors in England; and, by the charters of erection, the proprietors have right to appoint baron bailies, or magistrates of the barony, similar to stewards of manors in England, who hold courts for the recovery of small debts, and the punishment of petty offences, and have power to distrain or sequestrate for rents due within the barony. It was formerly customary for the bailie to impannel juries of the vicinage, to value and determine in cases of trespass and damage, by strayed cattle or the like, but from the frequency of appeals to the superior court of the sheriff, and the great diminution of strays and trespasses, owing to almost general enclosure, these juries are now altogether discontinued, and such matters are now either settled amicably by the parties, or by verbal reference to neighbours. The court of the baron bailie was formerly called the burley court, probably a corruption of barony court. The jurymen or members were termed burley men, *quasi* barony (court) men. A higher jurisdiction than barony, termed regality, subsisted in ancient times, hereditary in the hands of subjects, now happily abolished and forgotten, which possessed capital jurisdiction.

Any proprietor may have his lands erected into a barony, by application to Exchequer, on payment of the regulated fees, but always under the clause of *salvo jure cujuslibet*, without prejudice to any baronial or other rights, which may affect the lands of the new barony in consequence of any prior grant. In these charters, it is usual to insert a clause permitting the baron to appoint yearly fairs and weekly markets within his jurisdiction. Anciently territorial barons had the right of

of pit and gallows, or of imprisonment and capital punishment for offences committed within the bounds of their jurisdictions, but these improper powers have been long abolished. In many places the remnants of jugs, or iron collars for the neck, a species of pillory, are still to be seen appendant to the old gates of baronial residences, and beside churches, but it is believed there are no recent instances of their use. The spirit of modern times, as well as direct law, has very properly vested the superintendance of police in the justices of the peace and sheriffs of counties; in other words, in the judges and officers of the crown or state, instead of in private hands. In boroughs the magistrates are elected by the burgesses, according to the peculiar constitution of each.

In the transmission of property from one generation to another, by inheritance, or from hand to hand by sale, or any other way, it is not uncommon for a person who has a son at the time he makes up his titles, in the manner already explained, to take the new charter to himself in liferent only, and to his son in fee, or remainder, and the whole series of feudal investiture is completed in the same strain. This serves two useful purposes, by enabling the son, or *fiar*, to enjoy the political rights of the property at elections and the like, in the absence of the liferenter, and it saves repeating the formalities and dues of investiture upon the future succession of the son, as he is already invested in a contingent title, now opened and become perfect. This acts, however, in some degree as a species of entail, for that succession only, and subjects the property to the debts of the fiar, which has sometimes produced unpleasant consequences to the family property.

When a female, possessed of freehold property of an adequate amount, marries, by the courtesy of Scotland, her husband is entitled to exercise the political rights connected with her property; and when her eldest son comes of age, he may be invested with these rights, as fiar, while the father exercises the liferent rights, as substitute to his wife; but all this must be regularly contained in the feudal investitures.

A head court, or principal meeting of freeholders, is annually held in each county at Michaelmas, where freeholders who have been infefted one year and one day, or longer, are admitted by claim or petition, upon the roll. But such freeholders may likewise be admitted at an election meeting. The court of freeholders, in either case, judges, in the first instance, on all claims for enrolment, and may expunge from the roll all such as have been improperly admitted, or whose properties have undergone changes, by which their rights have abated. But an appeal lays, in all such cases, to the Court of Session, and thence to the House of Peers. When such subjects of litigation occur, in conjunction with a disputed election of member of Parliament, it is customary to discuss the particular rights of individuals in the lower courts, preparatory to trying the general merits of the election, before a committee of the House of Commons.

2. *Feu-Holding.*

Great numbers of small properties, and even some of considerable extent, are held by feu rights, or by what is equivalent to charter, infeftment, and sasine, under those who hold directly from the crown or prince.

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In those cases the immediate holder from the crown or prince is called the subject superior, and the person holding under him is termed the feuar, or sub-vassal. This last is absolute owner of the soil, and of every thing or circumstance connected with it, *de coelo ad centrum*, and is said to possess the *dominium utile*, while the superior has right only to the naked superiority, called *dominium directum*, but which includes the whole political rights attached to the property; unless when the superior has reserved, in the original grant, certain rents and casualties of superiority; or where he may have reserved the mines and minerals, with the right of searching for and working these, upon payment of surface damages. The vassal, upon transmission of the feu into new hands, by succession, is bound to take out new investitures from the superior, in the nature of a charter, with consequent infeftment and sasine, on payment of the ordinary fees, and one year's feu rent, as fine of renewal. When the property changes by sale to what is called a singular successor, a different fine becomes due to the superior, which is either legal or conventional, but is never arbitrary or at the will of the lord. By paction, the original grant, or feu disposition, often determines the amount of this fine, usually the payment of one years feu duty in addition. When that is not the case, the law has fixed it at a full years real rental value of the subject, at the time of renewal. These dues are termed casualties of superiority, as only happening contingently.

All vassals may divide and subdivide their feus at will, by granting sub-feus, the proprietors of which hold them in a similar manner from the first vassal, as he does from the original lord, subject superior, or freeholder.

And this subinfeudation may be extended downwards indefinitely, to any supposable series of sub-vassals. This latter seldom happens, unless in towns for the purpose of building lots.

To create or multiply electors for members of Parliament, it has long been customary for proprietors to split or divide their freehold rights of superiority, by grant or sale, among friends or dependants. Thus converting portions of their estates into separate freeholds, conveying away the superiority of these to others, and reducing themselves to the condition of vassals upon parts of their own lands. In this case very especial care is, or ought to be taken, to convey nothing beyond the naked superiority, with some merely nominal feu duty or quit rent, and to limit the taxations or fines for renewals, to a perfectly illusory payment, as a penny Scots, *si petitur tantum*, if demanded.

Formerly these superiorities used to be granted away for life only, with reversion to the original granter, and his heirs or disponees, and often under the reservation, expressed or understood, of being held only in trust, and of resigning when required. But to prevent the undue influence of large properties, which were thus often split among numerous nominal and fictitious dependant voters, to the exclusion or debasement of the political rights of the majority of real proprietors, a trust oath may now be tendered to voters, in which they must declare the freeholds on which they claim to be their own *bona fide* property, and not held in trust, or conveyed to them for the mere purpose of constituting them voters. Since this alteration of the law the splitting and sale of superfluous freehold superiority has become a matter of commerce, and may often be purchased by

by any one inclined to acquire the political rights of a freeholder. The usual price is L.400 for each, though this varies according to demand or other circumstances.

Of old the small properties about towns and villages were mostly held in feu from the superiors or proprietors of the great estates in which they are situated, and many large feus were to be found upon almost every estate in the county. These large feus had been sometimes granted as provisions for younger sons, but more generally for the purpose of feudal military services. They have now mostly been gradually purchased back by the larger proprietors, though some still remain of respectable extent. The village proprietors, or portioners, are now mostly reduced to cottagers, with small annexed gardens; and, to save the frequently recurring expences of formal feu rights, both in their original creation, and in transmissions, village lots, for cottages and gardens, are now often granted in assignable leases of long endurance, equal in effect to perpetuity, as for 999 years. Still, however, in the old villages many small possessions, from much less than an acre, up to 20 or more, are held by feu rights, and the proprietors, termed portioners, are often a good deal difficulted to make up their titles, from the neglect or ignorance of their predecessors, and are subjected to heavy expences, beyond all proportion to their abilities and to the value of the subject. The same stamp is requisite for the feu rights of a few yards square, as for those of the largest extent of feued land. Hence renewals of small feus are attended by a heavy and disproportionate expence. All small perpetual possessions ought to be granted in the manner of long leases. Perhaps formal entries of these in the baron court books, or in the rental books of es-

tates not baronial, accompanied by a notorial extract of the entry, joined to actual possession of the subject, might serve the purpose effectually, at an expence not worthy of consideration. If this mode is not sufficiently secure under the present laws, an act of Parliament might be procured, rendering leases in perpetuity of small possessions, limiting their extent, valid against all future proprietors of the dominant freehold, or their creditors.

Properties held feu under subjects superior are termed base-holdings, and somewhat resemble copy-holds of inheritance in England. Superiors can compel their vassals to renew their feu rights by process of non-entry.

3. *Run-rig and Run-dale.*

Anciently, upon almost every estate in the county, perhaps universally over all Scotland, at least in cultivated or arable districts, the larger feus, and even the farm lands, were distributed into a multitude of small intermixed alotments, scattered over the whole arable extent of the estate, or at least of the particular township, in narrow or broad irregular stripes, called respectively run-rig and run-dale, interspersed among each other, and with the lands remaining in full property to the superior or landlord. These rigs or dales were divided from each other by narrow or broad slips of uncultivated grass land, called rinds or baulks, full of rubbish gathered from the cultivated soil, and often overgrown with briars, brambles, thistles, and every kind of pernicious weed. In this situation the feuar or farmer of eight or ten acres or more, often had his various patches

ches in as many distant parts of the estate or township. Many of these feuars and farmers had likewise certain regulated rights in common pastures, sometimes connected in a similar manner with several neighbouring estates or townships, and they had right to universal pasturage over the whole arable lands, after a certain period, when the harvest was led home, and until another certain period in spring, when the seed work began: This right was called long tedder. At least in some townships the feuars and tenants had the singular privilege of allowing mares in foal to pasture at large, for ten days, or more, after the barley seed was in the ground.

Feuars and tenants likewise had right to cut and carry off sod, called feal and divot, from the moors and commons, for building and roofing their cottages and hovels, and other purposes; and to cut and dry, and carry off turf and peats from the moors and mosses of the estate for fuel. These intermixed patches, and their common rights, very much resemble the common field lands of England, and their connected wastes or common pastures. It is perfectly obvious that the almost irreclaimable sterility of large tracts of moor all over Scotland, has been occasioned by the frequently renewed practice of pairing and carrying away the surface, for turf, feal, and divot, thus removing in a moment the gradually formed vegetable soil, which may require numerous centuries to restore. The infield lands and crofts about villages and farm towns have, however, been very greatly benefited by that barbarous practice, having thereby acquired large accessions of rich adventitious soil, from the ashes of village fires, and the ruins of sod walls and roofs, always laid as manure upon the home lands.

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In consequence of a general enclosure act passed by the Scots parliament A. D. 1695, c. 23. these run-rig and run-dale lands, and their common rights, have all or mostly been abolished; and equitable distinct portions have been alotted to each proprietor or feuar, in absolute severalty. By the provisions of this excellent law, it is competent for any proprietor in run-rig lands to prosecute a division before the judge ordinary, or sheriff of the county, by regular excambion or equitable exchange, quantity and quality always considered. And by c. 38. of the same year 1695, the same right is extended to proprietors who have rights of commonty over waste pastures, to sue in the Court of Session for division, according to the comparative extents of their respective properties, called the dominant tenements, which have rights over the common, which is termed the servient tenement. Such are the general principles of these wise laws; but it is unnecessary to enlarge upon the minutiae of their application. It was, however, many years before these beneficial consequences were generally perceived, or extensively taken advantage of. The reporter cannot particularly learn when the greater part of the Berwickshire run-rig lands were divided off; but in the neighbourhood of his residence, the south-east corner of the county, it was within memory. The lands of Coldingham, Ayton, Flemington, Achincraw, West Reston, and Hutton, were all reduced from intermixed run-rig and common wastes, to distinct and absolute severalty, between 1750 and 1760.

In proof of the beneficial consequences attending the operation of this law, it may be noticed, That the reporter pays L.116 of yearly rent for one of these feus, in the township or barony of Ayton, which let, in its run-rig

run-rig state, immediately before division, for L.4 a-year, along with a right of common pasture, and of feal and divot, which is now disjoined from the property. Such instances might easily be multiplied if necessary; but it is difficult to discover the precise comparative situations of small properties, at the distance of 50 or 60 years, as most of them have, since then, been either subdivided or conjoined. Some extensive wastes common to many surrounding estates have been lately divided, or are now under division, and one or two remain open.

4. *Valued Rent.*

As connected with tenures, it may be mentioned, that the valued rent of freehold property in Berwickshire extended some years ago, according to Mr Home, to L.169,080. 16s. 11d. Scots; and that of the property held feu to L.9,285. 11s. 7d.; making a total valuation of the whole county of L.178,366. 8s. 6d. If regularly divided into political freeholds of L.400 Scots each, this might constitute a body of 445 electors; but so unequally is this superiority distributed, that the roll of freeholders qualified to vote only contains 125; and even of this number, some are still supposed to be nominal and fictitious, as no rigid examination into qualifications has been instituted for many years, in consequence of there having been no contested elections in this county for a great while past.

5. *Entails.*

While on the subject of tenures, it may not be irrelevant to give a general idea of the Scots entails. These

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are entirely unlimited in their duration, if properly executed; as the entailer can destine the succession of his estate indefinitely to any describable series of heirs he pleases to assume; and no act or contrivance of any after possessor, as the law now stands, can break or alter the destinations and limitations appointed by the original entailer, if properly devised, and recorded in the peculiar register of entails. All after proprietors are mere liferenters, and cannot alienate, contract debt, or alter the succession. The very attempt to do any of these three acts is an irritancy or forfeiture of the estate, and entitles the next heir of entail to dispossess the contravener, and to enter into possession. Any debts that may be contracted by the heir of entail in possession are merely personal, and cannot affect the lands. Yet, besides his own personal responsibility, and that of his whole moveable property, his creditors may attach or sequestrate his whole liferent interest in the entailed estate; and may retain, sell, or otherwise alienate it, during the liferent of the debtor, or until paid their just demands, if that can be effected during his life.

So long as an entail remains unregistered in the peculiar register appointed by law for that special purpose, an heir in possession is free to exercise every right of property, in the same manner as if the entail had no existence. But any person having even a contingent reversionary interest, may compel the production of the entail by summons in the Court of Session, and may crave to have it put upon record. This is done of course, and completes the legal formality of the deed, and secures its full efficacy in all future times.

6.

6. *Thirlage.*

The burthen of thirlage, being in the nature of a tenure, requires to be mentioned. By it the occupiers of land, in certain districts, are bound to grind all the bread corn, and oat meal, and malt, consumed in their families, or by their cottars, at a particular mill, to which they are said to be adstricted or thirled; and where they have to pay moulters or tolls, according to customary usage, considerably higher than would be exacted were they free to grind on bargain where they pleased. Although this takes place in Berwickshire, as in all Scotland, it cannot be said here to produce any peculiar hardship, as only what is needed for home consumption must necessarily be grinded under thirlage; while in some other districts of Scotland the whole thirled tenantry must grind the whole farm produce of certain descriptions, at the baronial mill, and are consequently forced to become dealers in meal, under peculiar disadvantages of manufacture, instead of having it in their power to sell their grain in free market.

In Berwickshire, the proprietors of land usually bind their tenantry to grind for their own consumption at the peculiar mills of the several estates; they having so bound themselves to their millers, with the view of procuring higher rents for their mills. Even this gentle degree of thirlage is fast falling into disuse, as the millers of late years have found more profitable employment in manufacturing grain upon their own account, and now despise the petty profits of thirlage, especially as they are obliged to fetch and carry the grain and its produce from and to the persons who are thirled to their mills, however small the quantity.

The legislature has lately provided a remedy against thirlage, accessible to such as may incline to get free from its bondage; and as these are not particularly oppressive in Berwickshire, it does not seem necessary to enter farther into the consideration of this ancient usage. It is said that very few have hitherto taken advantage of the provisions of this statute. Perhaps, like the general acts of the Scots parliament for the division of run-rig and commons, it may remain sometime in abeyance, and may be called into action hereafter, when its advantages, and the mode of applying its remedy, are better understood. If well informed of the few cases which have been hitherto commuted under this act, its principles seem to have been mistaken by the referees. It is said that the value of the whole toll has been awarded against those applying for relief; when certainly, in rigid equitable construction, only the excess of adstricted, beyond free grinding, ought to be considered as the right of the mill, so far as thirlage is concerned.

Where thirlage subsists, the farm servants are legally bound to assist in repairing dams and mill races. But the customary extravagant fare, which the millers must supply on these occasions, and the negligence with which all compulsatory labour is sure to be executed, have virtually abolished this bondage; as millers now find that they can hire voluntary labour cheaper, and to better purpose.

7. *Burgage Holding.*

In the lands belonging to the community of the royal borough of Lauder, the only one in this county, a peculiar

culiar species of burgage tenure takes place. Instead of being acquired by servitude or apprenticeship, by mere inheritance, or by purchase or grant from the corporation, the freedom of that borough can only be got in consequence of having the right of property in one of its burgage lots of land, or borough acres; which are subjects of private sale, disposition, or inheritance, like any other landed property. Of these lots there are 105, consisting each of about two English statute acres, of croft or old infield land in absolute severalty. The whole moor or outfield land belonging to the town is in a state of undivided common, which the corporation has not hitherto been able to divide, owing to minorities and other obstacles. The general inclosure act already mentioned, does not apply to the division of commons belonging to royal boroughs, or rather expressly excludes them from its provisions. But by agreement among the burgesses, a portion of the common is regularly broken up for tillage at certain intervals, and is then divided by lot among those having interest, and is cultivated under regulations for a limited period, when it is again laid down to grass, and another portion broken up after the same plan. The extent of this common is about fourteen hundred acres; which, divided among the 105 borough lots, would give about thirteen and one-third acres to each.

To such parts of these lands as remain in common pasture, each burgess is entitled to send a *stint*, or limited number of beasts, according to the regulations of the burgh on the subject. These are taken care of by a common herd, who drives them out every morning, and brings them back to town every evening.

From

From the heritable and transferable nature of these burgess lots, it has necessarily happened that several have been concentrated in the possession of single individuals; and it may happen that the whole may ultimately fall to one proprietor, who will then become the corporation.

Though not now included in the county, or in Scotland, some slight notice may be taken of Berwick, once our chief town, and a principal member of the Scots royal boroughs. In it the right of burgess is hereditary in all the sons of freemen, and acquired by apprenticeship. The corporation, consisting of the mayor and burgesses, has a very extensive landed estate, part of which is allotted to a certain number of the elder resident burgesses, in meadows of about two acres each; and most of the rest is let in farms, but the rents are mostly divided among a numerous class of resident freemen, or resident widows of freemen, without any discrimination of circumstances except seniority. Were the public estate applied to useful public purposes, Berwick would easily and soon be placed in a situation of conveniency, and even of elegance and splendour, far beyond any town of its magnitude in the kingdom; and might institute establishments for the provision of decayed burgesses, and their necessitous widows and orphans, that would make it superior to any place of its size in Europe. Even under its present mistaken management, the children of freemen are provided with excellent schools of every useful species of education gratis; yet many circumstances of general comfort, even the supply of water, are most miserably deficient; and its harbour, capable of being made among the best on the

the east coast of Britain, and paying already very considerable dues on shipping and commodities, is very much neglected. This, however, it is hoped will be soon remedied, as an act of parliament has been procured, with ample funds, under the management of trustees, for improving the harbour, and the navigation of the Tweed.

CHAPTER III.

BUILDINGS.

SECT. I.—HOUSES OF PROPRIETORS.

In the new plan for the reprinted reports this section is directed to be subdivided into, 1. Houses advantageously situated; 2. Well planned for country gentlemen of moderate fortunes; 3. Elegantly constructed. But having made the survey before this distribution was appointed, and consequently without any view to these particulars, they can only be touched upon incidentally as they then occurred.

There are many handsome houses belonging to landed proprietors, and some of considerable magnificence. It

It seems quite unnecessary to enumerate, and is impossible to describe, the private buildings in a work of this nature, without extending far beyond due bounds. A few, therefore, of the principal ones only shall be shortly noticed.

Home Castle, situated on a commanding eminence at the west end of the vale, how, hollow, or *holme*, of the Merse, from which probably its name may have been derived, was the ancient seat of the once powerful Earls of Home, one of the most ancient of the Scots noble families.

In a work of this nature genealogical researches are not called for, yet some short notice respecting this family, the head of the county, historically and politically, may be allowed without presuming to have made any rigid investigation on the subject.

Gospatric, Earl of Northumberland, soon after the Norman conquest, having lost that dignity in 1072, obtained from Malcolm III. King of Scotland, extensive possessions in Merse and Lothian, where he established a powerful family, which long flourished as Earls of Dunbar, their chief residence. This first Gospatric was grandson of Elfgiva, daughter of Etheldred, King of England, and consequently lineally descended from Hengist and Horsa, the Saxon conquerors of England, and from Vortigern, King of the Britons. Among the numerous vassals of English, or of French and Norman origin, whom Gospatric settled in his new domains, mention is made of William de Courtney, to whom he gave his daughter Ada, and the lands of Home. It is highly probable that the present family of Home derives its origin from this marriage; but it is believed to have been

by a subsequent marriage of an heiress of this Courtney family of Home, with a younger son of a direct male descendant of the first Gospatric. But so fluctuating have been the fortunes of great families, more especially on the borders, through the long wars with England, and the many civil wars with Scotland under the singularly unfortunate house of Stuart, that it is now extremely difficult, often impossible, to trace back their descent, through various forfeitures and restorations, with any accuracy. Record and original writings, more especially retours, dispositions, marriage settlements, royal and private grants, papal dispensations, and such documents, are the true and only legitimate sources of such research, but are neither accessible to an agricultural reporter, nor does his duty call him to such research if they were.

The castle of Home has been of great extent, but is now in ruins. Hirsel, near Coldstream, the present residence of the Earl of Home, is a very beautifully ornamented place, in one of the most fertile parts of the Merse, and commands most extensive views of the rich vale of Tweed.

Marchmount house, formerly the Red-braes Castle of Polwart, the residence of the late Earl of Marchmount, is an extensive ornamented place, near Greenlaw. The late Earl was the last male of his family and line, a younger branch of Wedderburn, one of the most ancient branches of the Home family. But as the patent of nobility is to heirs male whomsoever, the dormant title is now claimed by Lieut. Alex. Home of the royal navy, who has been served heir male of Wedderburn, the parent stock of Polwart; and who, it is believed, will

will be able to prove the extinction of all nearer male collaterals.

Thirlstane or Lauder castle, the property of the Earl of Lauderdale, close to the burgh of Lauder, is partly ancient, and partly more modern, of various dates incongruously grouped. This place has long been neglected.

Dryburgh abbey, at the west end of the county, a recent acquisition, and now the residence of the Earl of Buchan, is most beautifully situated upon the banks of Tweed.

In its immediate neighbourhood is an ancient small castellated house, or *peel*, with some modern additions: Bemersyde, the residence of Mr Haig, the representative of a very old family, contemporary, it is said, with the famed Thomas Lermont of Ercildon, vulgarly called the Rymer, who is reported to have prohphesied on many subjects, and among others of his neighbours the Haigs, or dè Haga, of Bemersyde:

"Qhuat eer befa, qhuat eer betyde,
"Haig sall be Haig o Bemersyde."

Merton on Tweed, a little below Dryburgh, is the elegant and highly ornamented residence of Mr Scott of Harden. Mellerstain, the seat of Mr Baillie of Jerviswood, member for the county, is a large and magnificent mansion, surrounded by very extensive plantations. Newton Don, the residence of Sir Alexander Don, is a place of great natural beauty, laid out with much taste. Wedderburn house, the residence of Mr Home, heir of the ancient Wedderburn family in the female line, is a magnificent modern castellated house, but the surrounding grounds are much neglected. Paxton house, built by the same person, but now the property of his nephew, Mr Home of Paxton, is an elegant structure of

moderate size, amid highly ornamented grounds, on the beautiful banks of Tweed, about four miles above Berwick. Dunse castle, the large and commodious, but irregular mansion of Mr Hay of Drummelzier, is unfortunately situated in a hollow, originally chosen for security, as in former times it has been obviously surrounded by water. Manderston, near Dunse, the residence of Mrs Wetherston, is an elegant modern building, and its grounds have been recently laid out with great taste.

Allan-bank, the residence of Sir John Stuart, is a beautiful and tastefully embellished place, near the confluence of Blackadder with Whitadder. Blackadder house, belonging to Mr Boswal, almost opposite to Allan-bank, is a fine place naturally, and is considerably embellished. Nesbit house, the residence of Mrs Carre, is situated in a park of some extent, the only one perhaps in the county on the old scientific plan of made places, and is said to have been laid out by a pupil of the celebrated *capability* Brown.

Ladykirk house, in the fine vale, or haugh of Upsettlington upon Tweed, recently built by Mr Robertson, is a large beautiful and commodious mansion, and its extensive surrounding grounds are highly embellished. A large contiguous farm is cultivated with true scientific spirit by the proprietor, who is one of the most judicious and most successful improvers of sheep and cattle in the vale of Tweed, taken in its largest sense.

Ayton, close to the village of that name, in the eastern extremity of the county, a commodious old house, with modern additions, on the scite of an ancient castle, and standing in an extensive well wooded park, is the residence

residence of Mr Fordyce, surveyor general of the crown lands. In early life this gentleman was one of the first improvers in this county, on the principles of modern husbandry, by lime turnips and sown grasses for pasture. But his official situations of high trust have necessarily much called off his attentions from agriculture for many years. He has, notwithstanding, done a vast deal for the embellishment and improvement of his estate, and of the county, by considerable plantations, which are extending yearly, and by marked attenion to the improvement of the public roads. His demesne farm, of considerable extent, managed under his direction, by an experienced and intelligent steward, is a pattern of judicious husbandry.

Although Dunglas, the residence of Sir James Hall, Bart. be situated in East Lothian, immediately beyond the borders of Berwickshire, it may be mentioned here, as by much the largest part of his valuable and extensive estate is in this county. This place, at which a magnificent mansion is now building, is very near the shore of the German ocean, and much exposed to sea winds from the north and east, yet is ornamented by extensive and thriving plantations of trees. Of these, indeed, a narrow external stripe, especially to the north and west, is much injured by the winds, the trees being stunted or crabbed in their growth. This instance, and a similar one at Netherbyres, near Eyemouth, in this county, are sufficient proofs that trees may be successfully reared, both for ornament and profit, near the sea, if planted in sufficient breadths for mutual shelter. But the very extensive and thriving plantations of Tyningham, in East Lothian, the seat of the Earl at Had-

dington, which extend to high water mark, and in an extremely exposed situation, give a short decisive proof of the beauty and profit which may be derived from judicious plantations in such situations.

Besborough, formerly Kaimes, a very neatly ornamented place in the Merse, is chiefly mentioned as having been once the residence of Henry Home, Lord Kaimes, a judge in the supreme Courts of Scotland, and a much esteemed author in a variety of subjects in law and general literature, but here particularly named, as author of the Gentleman Farmer, a work still unrivalled for sound practical principles, and just rules of agriculture, though now not to be rigidly followed in its more minute details, and in its theory certainly fanciful and absurd, owing to the then vague state of chemical science, upon which alone any rational and consistent theory of agriculture can be founded.

Besides these already enumerated, there are many other houses of proprietors, in various parts of the county, several of which are singularly neat and commodious in their structure, and surrounded by ornamented grounds and thriving plantations. But the more general extension of planting is still very much wanted, for shelter and embellishment, and for supplying the country with timber. Unfortunately that highly ornamental, and ultimately most profitable improvement, has been hitherto almost entirely confined to residentiary places: And off farms, which constitute by much the larger portion of the county, are totally destitute of trees, giving a bare neglected appearance to large tracts of excellent and well cultivated land.

The

The preceding reporter, Mr John Home, estimated the houses of the nobility and gentry of Berwickshire as amounting to 92, of which 69 are in the Merse, and 23 in Lauderdale and Lammermoor.

In justice to the late Lord Kaimes it may be proper to observe here, that, in the appendix to his valuable work, the Gentleman Farmer, Art. 2d. which was first published in 1776, he proposed the first idea of a Board of Agriculture, and suggested the propriety of county agricultural reports. These suggestions, although on a very different scale from the recently established institution, sufficiently refute the pretensions of a modern agricultural writer, who claims the merit of having been the *first* who recommended these great measures to public attention. In full proof of this, the following extracts from observations by Lord Kaimes on this subject, are here inserted:

"We have a board for manufactures and fisheries, a "wise institution which has done much good. Why not "also a board for agriculture? Is agriculture a less use- "ful art than those mentioned? or does it less require "instruction? Hartlib, in his legacy, laments that no "public director of husbandry has ever been establish- "ed in England," &c. &c.

"The plan I have in view is simple. Let the board "consist of nine members, the most noted for skill in "husbandry, and for patriotism. As I propose no re- "ward to these gentlemen, but the honour of serving "their country, the choice will not be difficult. To

"ease

" ease the board from the laborious branch of their " business, they ought to be provided with an able se- " cretary, &c. &c.

" A regular meeting once a month may be sufficient. " The things necessary to be undertaken by this board " at the commencement of their operations, will re- " quire much labour and sagacity. The first is to make " out a state of the husbandry practised in the different " counties, in which notice must be taken of the cli- " mate, of the soil, of the mode of cropping, and of " the instruments of husbandry; noting the prices " of all the particulars that enter into farming," &c. &c.

Though Lord Kaimes could not accomplish the establishment of a board of agriculture, yet he got some county reports executed according to his idea of them, by a very respectable farmer in East Lothian, the late Mr Andrew Wight of Ormiston. These were published in six octavo volumes, and contain a very good account of the state of agriculture at that time, about 26 to 30 years ago. How different that was from the present state, would require more discussion than can be here admitted to explain; yet these reports certainly did material service to Scots husbandry. In regard to the establishment of the board itself, after it had been recommended in vain from other quarters, it is the more creditable to the person by whose exertions every difficulty was at length surmounted, and who has carried it on with so much zeal and success.

The surveys now carrying on, and nearly completed, are upon a much more extended and comprehensive plan than those proposed by Lord Kaimes, for they relate not only to agriculture, *but to the internal improvement of the country, and all the various particulars therewith*

therewith connected. In fact, the present plan derived its immediate origin from the STATISTICAL ACCOUNT OF SCOTLAND, the greatest and most useful national work ever contrived and executed by the genius and industry of a private individual, and is actually a continuation and improvement of that vast undertaking.

This subject is so well treated of in the Edinburgh Encyclopædia, a work now publishing, that we have been induced to add the following extract from the article *Agriculture*, vol. 1. p. 219.

" Little farther alteration in the rural economy of " England occurred, except in the superior attention " bestowed on live stock by Mr Bakewell and others, till " the establishment of the national Board of Agricul- " ture, when a general desire seized all ranks to pro- " mote internal improvements. Hartlib, a century and " a half before, and Lord Kaimes, in his Gentleman " Farmer, had pointed out the utility of such an esta- " blishment, but it was left to Sir John Sinclair to carry " their ideas into execution. To the unwearied endea- " vours of Sir John are the public indebted for this " novel institution, which has certainly done much " good, and may still do a great deal more. 1*st*, A " great number of new men were brought forward " by the board, whose names otherwise would probably " never have been heard of, and these being chiefly " practical people, in other words, people profession- " ally concerned in farm management, agriculture, by " their endeavours, was rescued from the hands of " theorists, and a revolution of no small extent accom- " plished in rural affairs; 2*dly*, Before the board was " instituted, the bond of connection amongst agricultu- " ralists was slender, and served few useful purposes,

" each

" each standing on his own strength and information,
" and knowing little more about the practices of con-
" terminous districts than those of China, or the most
" distant countries. The establishment of the board
" did away at once all those evils and difficulties. A
" common fortress, erected for the benefit of all agri-
" culturalists, and to which each might resort for ad-
" vice and protection, was immediately recognized. It
" made farmers, who resided in the most distant quar-
" ters of the kingdom, acquainted with one another,
" and caused a rapid dissemination of knowledge amongst
" the whole profession. It did more. The art of
" agriculture was brought into fashion; and this being
" the case, old practices were amended, new ones intro-
" duced, and a degree of exertion manifested which
" had never before been examplified in this island.

" But the numerous surveys of husbandry, executed
" under the authority of the board, were of singular
" advantage also, because they brought to light the
" practices of every county; and, whilst they pointed
" out the obstacles which lay in the way of improve-
" ment, stated the most effectual methods of removing
" them. The very collision of argument which such
" discussions occasioned, was of advantage, causing
" agriculturalists to investigate the principles of the art
" which they professed, and inducing them to search
" after new channels of improvement. In a word, the
" board, in a few years, collected a mass of agricultural
" information hardly to be equalled, and not to be ex-
" ceeded, by the accumulated stores of every other na-
" tion."

SECTION

SECTION II.—FARM HOUSES AND OFFICES.

FORMERLY the farm houses of this county were almost universally cottages, built of rough stone and clay mortar, and covered by thatch or sod. Some such still remain, even upon extensive arable farms, or old unexpired leases. The best of these contained only three small low roofed apartments, one of them the kitchen, all three with clay floors and bare walls, merely whitewashed, never ceiled, and seldom ever lofted. Now on every farm of any size the farm house is built substantially of stone and lime, and consists of two stories, either slated or tiled, neatly finished with lath and plaster, and every way fitted for the comfortable and convenient accommodation of their respectable inhabitants. The kitchen and household offices are neatly paved with flat stones, and all the rooms boarded and ceiled. Many of them are now greatly superior to the houses that were occupied by the middling gentry 40 or 50 years ago.

Anciently the wretched farmers cottage formed part of a miserable square or row of offices, and opened immediately upon the dung hill or muck court. The first improvement was to place the court of offices directly behind the house. But now the house is almost always placed at some distance from the offices, both as more seemly and less dangerous for the communication of

fire to the yard, which always abounds with dry straw, and to which the rick yard always immediately adjoins.

Modern farm houses, on farms of any importance, generally contain a dining room and parlour on the ground floor, with four bed rooms on the second floor. A back wing contains the kitchen and its offices on the ground floor, with a nursery and woman servants room above. Milk house, skullery, wash house, pantry, coal house, and other conveniences, are partly within the walls, and partly attached sheds or to-falls.

Manses, as they are called in Scotland, or parsonage houses, are built much upon the same plan with farm houses, and are provided with a barn and stable and cow house, for the convenience of the minister and his family, as every minister of a country parish has a glebe of from seven to ten or twelve acres belonging to his living, and usually adjoining his manse. Besides, many ministers rent a small farm in addition, to give sufficient employment for one man and two horses. This small farm is now almost a necessary piece of economy, as otherwise the expence of wages, and keep of horses, would render the glebe by itself an unavoidable source of pecuniary loss. Those who do not chuse the trouble of husbandry let their glebe to some neighbouring farmer, perhaps retaining pasture for a cow, and stipulating for winter fodder and litter. The manse and its offices are built and repaired at the expence of the heritors, or proprietors of land in the parish.

Upon all principal farms the offices, provincially called the *stead*, *steading*, or *courtin*, form three sides of a square or court yard, all substantially built of stone and lime, and covered with slates or tiles. In the usual and most convenient disposition the barn forms the middle

dle part of the north side of this court. The stables, cow houses, and feeding shades, are arranged partly on the east and west sides of the square, and partly on the same range with the barn. The dung hill, or straw yard, in the middle, is generally surrounded by a stone and lime wall, leaving a paved or gravelled cart road all round, between it and the buildings, and is divided by cross walls into three or four separate courts for wintering cattle of different ages and descriptions, each of which divisions has a shade for sheltering the cattle at night and in bad weather. The whole is supplied with water by a pump well, having spouts or pipes leading to troughs in the several divisions. Gates are left in proper places for admitting litter and fodder, and for removing the muck; and racks are placed in the several fold yards for fodder and turnips.

The east side of the offices usually consists of a range of shades for feeding cattle on turnips, or with hay and straw, and these are now commonly divided by cross walls or racks, leaving room for two, or at most, three beasts in each division, and each shade has a small open yard, to allow the cattle to walk about, to feed either under shelter or in the open yard, and to change their food at will. Experience shews that cattle fed in this manner are more adapted for travelling to distant markets, than when tied up in close feeding houses. In some instances, instead of stables for the work horses, similiar shades and small courts are allotted to each pair, where they feed without being tied up. In this way horses are said to be infinitely less liable to grease, than when kept in close warm stables. To every shade a water trough is, or ought to be, allowed, and each has a gate to admit a cart for removing the muck.

On

On the north side of the barn, the rick yard is generally placed, and has almost universally a thrashing mill, impelled by water, wind, or horses. Steam has of late been proposed for the purpose, but of the safety and economy of this power the reporter has no experience.

The rick yard is usually ploughed into twice gathered ridges of 21 feet broad, for placing the ricks in safety from water, and is surrounded by a substantial fence wall, with sufficient gates. The fence wall of the rick yard is usually a half sunk wall, or ha-ha, forming a complete fence on the outside, but low within, to facilitate the circulation of air to the bottoms of the ricks.

The barn requires to be of considerable size, and is divided into three or four apartments. In one of these ought to be sufficient space for one rick of unthrashed grain, to be ready when wanted, whatever may be the state of the weather. This is generally an upper floor, immediately connecting with the feeding board of the machine. Immediately below this, the corn room is usually situated; into which the thrashed grain is delivered from the machine, to be dressed up for market. In this room, or some other convenient part of the barn buildings, some farmers have a pair of millstones driven by the machinery, to break corn and beans for the horses, and to grind oats, barley, or other grain; and a chaff cutter can readily be placed in some convenient corner if wanted.

Immediately beyond the machine, the straw barn is situated, having a small intervening room for holding chaff, blown out by the winnowing machine which belongs to the thrashing apparatus. The straw barn ought to be of sufficient size to hold the straw of two ricks

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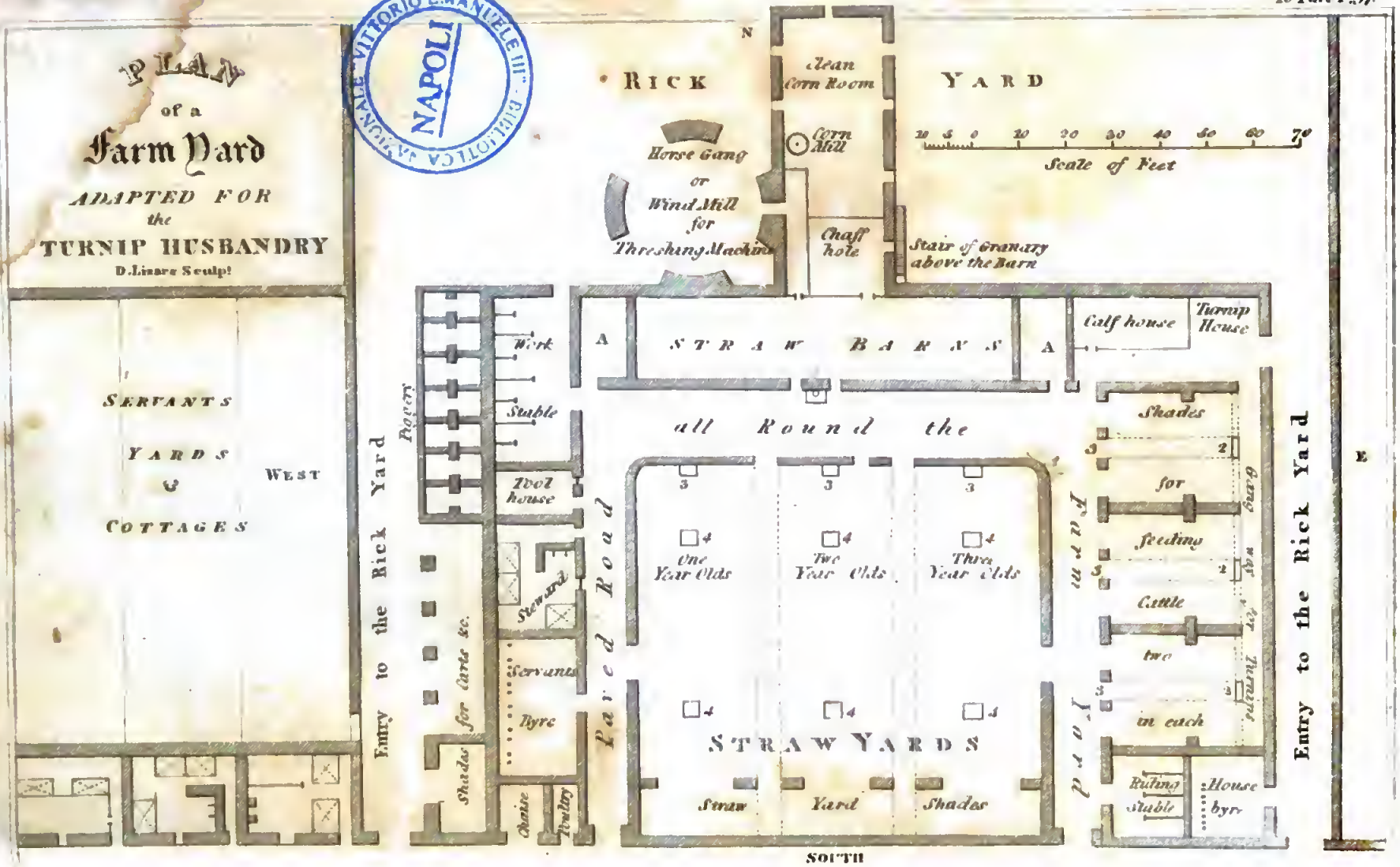
To Face P. 97.

Plan of a Farm Yard ADAPTED FOR the TURNIP HUSBANDRY

D. Linare Sculp.



ricks at once; one for litter and the other for fodder. Perhaps the most commodious disposition is, to place the straw barn in the middle of the north range of the court of offices; and the machine house with the bay, or unthrashed corn barn, and the corn room below, at right angles behind this; having an opening into the rick yard, to receive the corn that is to be thrashed, and another opening into the middle of the north side of the straw barn, for receiving the straw from the machine; carrying the litter straw to one end and the fodder straw to the other.

The reporter has been permitted by the proprietors of the Farmers Magazine, to insert the plan of a complete court of farm offices, calculated for a moderate sized farm of turnip soil, according to the most approved disposition now followed in this county.

It was published in that Magazine several years ago, in consequence of a communication from the writer of this report, and is intended to combine the several necessary conveniences, as copied from a number of excellent new farm yards in Berwickshire, and several other districts. In general the plan explains itself sufficiently; but it may be necessary to mention that (o) represents the situation of a pump-well and water trough, whence water is distributed into troughs in the various fold yards, at 2, 2, 2, &c.: 3, 3, 3, &c. are straw or hay racks, which at the same time serve as divisions between the several fold yards: 4, 4, 4, &c. are troughs in which turnips are given to the cattle in the straw yards. The stewards cottage and those of the farm servants, shew different dispositions of the fire place, and of the close beds alluded to in the 5th section of this chapter. A, A, are apartments divided off from the

straw barn, which may be applied to various purposes; as a stable for a stalion, or for sick horses, or the like.

SECTION III.—REPAIRS.

As these substantial and convenient offices have only been adopted of late years, instead of the very insufficient hovels of former days, they have usually been constructed at the expence of the proprietors, by special bargain with the tenants, at the time of concluding for a new lease, as already mentioned in a former section. The tenant is bound to keep the whole in thorough repair at his sole expence, during the whole currency of his lease, and to leave all in good and sufficient condition at his removal. He is even considered as liable to all risks from fire during his lease, and ought therefore to be always covered by insurance.

SECTION IV.—PRICES OF BUILDING MATERIALS, AND ARTISANS LABOUR.

The materials for building are invariably stone and lime, as already noticed in Ch. I. Sect. v. All houses of

of any importance, and even the best farm houses and manses, are slated. The rest, and the general run of farm offices and cottages are covered with pan-tiles, and thatch is fast going into disuse. One solitary instance occurs a few miles from Berwick, and built by a Berwick gentleman, of a commodious small mansion, and extensive farm offices, built of brick.

The expence of building and finishing necessarily varies according to the modes of both, and the distance of materials, and it would require a very elaborate investigation to give any satisfactory or useful specific information on the subject. One very useful method of grossly estimating the expence of building a dwelling house, finishing and roof inclusive, is by the cubical foot over walls, excluding the contents within the roof. Twenty years ago, from the information of an experienced builder, fourpence was considered a fair valuation for a moderately well finished substantial house; and from the rise which has since taken place in materials and wages, sixpence may now be taken as a reasonable equivalent. In this way of estimating, a small but neat family house, in Berwickshire, may be built and finished for somewhat between L.800 and L.1000; one of larger but moderate dimensions, for from L.2000 to L.3000. This must, however, necessarily vary according to the materials, and to the elegance of structure, ornaments, and inside finishing.

The expence of erecting farm houses and offices must likewise vary, according to the distance of materials; which, however, is very seldom taken into account in forming estimates and contracts, as the whole expence of leading the materials of all kinds is almost universally laid upon the tenant. A rood of rubble building of

rough unhewn stones and lime, containing 36 square yards of face, and two feet thick, may be contracted for about 36 shillings, including labour and service, and working the lime mortar; but exclusive of purchase of lime, quarrying the stones, and leading of the whole materials. This price rises in proportion to the height of the wall, on account of additional expence for carrying up the materials.

A substantial neat and moderately well finished farm house or minister's manse, of tolerable dimensions for accommodating a respectable family comfortably, may be built, roofed with slate, and finished for from L.250 to L.350; or at the rate of about fourpence per cubical foot, besides the carriage of materials.

The remainder of the farm offices and the servants cottages, in which no finishing whatever is required, and covered by pan tiles, may probably cost about twopence for each cubical foot of close building, threehalfpence for each cubical foot of shades, and three shillings for each running yard of fence walls, six feet high, with raggled coping. Or, according to the accommodation required for the size of the farm, from L.350 to L.1000 in addition to the expence of the farm house.

It is obvious that the accommodations necessary for a small farm, must cost greatly more in proportion than those required for one of large extent. A tenant, occupying a farm of L.300 a-year of modern rent, can scarcely be decently accommodated with house and offices below an outlay of L.600; while a farm of ten times the magnitude may be amply accommodated for about three times that sum. The expence of inclosures, and loss of land by drift ways, will be much in the same proportion in favour of large farms. And the

expence

expence of marketing and superintendance for a large farm will hardly be more than for a small one.

The charge of building stables and offices for a gentlemans house, need not be insisted upon, as it will be nearly the same with farm offices already mentioned; such offices being now mostly built at some distance from the mansion, and kept out of sight. Where they are intended as ornamental appendages, their cost must correspond to the splendour of their plan and elevation, and cannot be reduced to rule.

To avoid the danger of fire, the cottages of the farm servants are now almost universally built at some distance from the offices, excepting one cottage for the farm steward, or the person having charge of the cattle, which is usually placed on one side of the court of offices, between the stable and cow-house, that he may be ready to give assistance during the night in case of any accident.

It would be an excellent precaution against the communication of fire if all the party walls, between the various houses that compose the court of offices, were carried a few inches above the roof, no part of the timbers of the roofs of each allowed to communicate across these party walls, and no doors of communication through them.

The present wages of artizans employed in building are as follows: masons, slaters, and joiners, 2s. 6d. to 3s. 6d. labours 1s. 10d. to 2s. 6d. each, by the day, finding themselves in victuals. Quarrymen ordinarily contract for stones at 8s. to 10s. per rood, besides the expence of tirring, or laying the rock bare of earth. The quarry itself seldom costs any thing; as the demand for stones is not sufficient to allow of quarries being

let. Gentlemen usually accommodate each other in these matters, and allow the use of quarries to their tenants and feuars.

SECTION V.—COTTAGES.

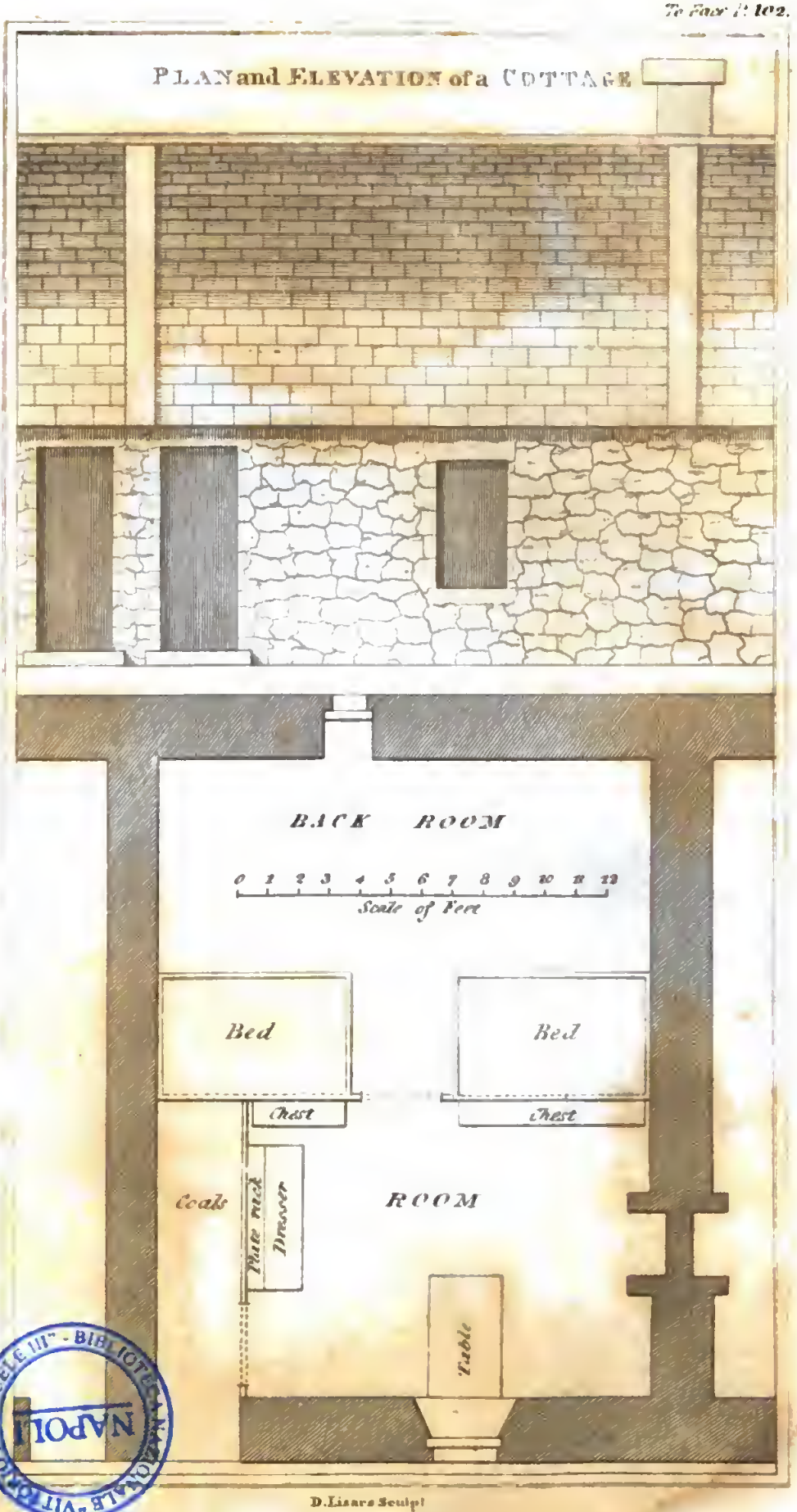
1. *Plans.*

THERE is nothing particular in the cottages of this county. Upon the farms they are for the most part built in rows of one story only, having alternately a thick gable wall, with the fire places of two cottages, and a thin wall as the other division. They are now universally built of stone and lime, and for the most part roofed by pan tiles. In some instances they are slated, and some are covered by thatch.

A thatched roof is certainly warmer in winter and cooler in summer, than either slate or tile; but is much more liable to take fire; and farmers are not now disposed to permit any part of their straw to be diverted from its proper object, manure. Thatched roofs, especially in towns and villages, are attended with such eminent danger of spreading conflagration, that they ought to be prohibited under heavy penalties.

The floors of Berwickshire cottages are mostly formed of clay or hard rammed earth, but they are sometimes paved with bricks. Universally they consist of one floor only, generally about 21 feet by 16 within walls;

PLAN and ELEVATION of a COTTAGE



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walls; but by the disposition of the close timber beds used by our peasantry, and other articles of furniture, they are commonly divided into a chamber, a closet or back room for milk, meal, potatoes, and other household articles, a coal hole, and a small lobby or entrance passage. The accompanying plan of a farm cottage, belonging to a row, will give a more distinct idea than could be conveyed in words; and the elevation will give a tolerable notion of the rubble building used in Berwickshire.

In the villages the houses are mostly built two storys high, and divided into four or more apartments, usually occupied by as many separate families. The lower rooms often serve as workshops of various trades, or for small grocers, haberdashers, or chandlers. Alehouses, and retailers of spirits abound every where; yet, upon the whole, the villagers and farm servants are decently sober in their habits; and orderly in their general behaviour. Few villages of any size now want one or two public bakers of wheaten bread, and one or two butchers.

2. *Expence.*

A cottage of the kind usually built on farms for the hinds or married servants, of the size already mentioned, may be built, roofed with tiles, and completely fitted for habitation, for from L.16 to L.21, according to distance of materials. All this, however, is intirely independant of the furniture already mentioned, which uniformly belongs to the cottagers, and may cost from L.10 to L.15 more.

3. *General Remarks.*

Much has been said of late years about accommodating the laborious poor with small patches of ground for cultivation, and giving a cows grass to each cottager, certainly with the most benevolent intentions. The reporter is anxious to avoid all controversial matters, and wishes merely to describe the actual state of Berwickshire as relative to agriculture; yet he hopes a few general observations on this subject will not be considered as stepping beyond his province. Day labourers have no leisure for attending to the cultivation of any extent of land, and therefore a small garden for potatoes, for cabbages, and other pot herbs, is perfectly sufficient for the accommodation of each. Any thing farther would break in upon their time of labour for hire; and the farm work of Berwickshire is fully sufficient, in all seasons, for all that are willing to work.

For grazing the cows of such villagers as chuse to have that accommodation, small grass fields may always be hired yearly, in this county, in the neighbourhood of every town and village; and it is now very common for the villagers to form clubs or copartneries, for taking such pasture fields at the annual auctions, for their cows and horses. The Berwickshire accommodations for married servants, in regard to cows and potatoe grounds, have been already slightly noticed, and will be more particularly explained in another division of the report.

Were a day labourer provided in a cows grass, and land for cultivation at an undervalue, besides the obvious loss to the proprietor, it would, for the most part,

render

render him lazy, and useless to the neighbourhood; he would either be in constant miserable poverty, from his indolence, or so independant that he would refuse to work, unless paid much beyond the average wages. To make him a small farmer at an adequate rent, would deprive the tenantry of his labour altogether, and would force him to work far beyond the ordinary exertions, to enable him to live in misery, and to pay the ordinary rents. Such a plan, in this county at least, would establish a new class in rural society, for which there is no place, in the present scanty population. Even were the population superabundant, it is very questionable if such a description of people would be useful to the community, or decently comfortable to themselves and families. In years of ordinary fertility they might make shift to subsist; but in years of scarcity they would necessarily be subjected to misery and famine, and would at all times intercept the supplies from the manufacturers, the inhabitants of towns, and the military and maritime protectors of the country. Every one of them can at present procure at the current price, as much ground as suffices to grow potatoes for their families, and may, if they chuse, keep cows on the principles already stated. Even the usefulness of cow keeping in small villages, is necessarily limited to the demand for milk; and it has happened frequently from the supply being beyond the demand, that village cows have not nearly paid their expences. In every parish the justices ought rigidly to debar the keeping of cows or horses by such cottagers as have not taken adequate pasture for their regular maintenance. As some, under pretence of pasturing by road sides, are

guilty

guilty of great depredations on the neighbouring farmers; turning in their cattle under night, even into hay fields and standing corn, and stealing clover, hay and corn sheaves.

Were those labourers or hinds, who belong to the continually recurring operations of agriculture on each farm, to be placed in situations either altogether, or even partially independant of the respective farmers to whom they are attached, instead of assistants they would become incumbrances, and would completely counteract the tenants power of cultivating their farms with energy and propriety. They would effectually prevent the farmers from thriving, from doing justice to their land, and consequently from paying any thing like adequate rents; and would themselves ultimately become useless, dissipated, and worthless paupers. As well might the legislature impose upon the nobility and gentry a set of privileged coachmen, butlers, and land stewards, independant of their controul, as that the great landlords should fix cottagers upon their tenants, as hinds or ploughmen, hedgers and labourers, over whom the immediate masters had no direct command, and could not turn them off for better behaved servants. To follow out this subject would lead to discussions for which the reporter has neither room nor inclination.

As chiefly connected with villagers and cottagers, it may be mentioned, that besides the parish churches of the national presbyterian worship, almost every village of any importance in the county has one or more meeting-houses of sectaries; mostly dissentients from the presbyterian rules; such as Burghers, Antiburghers, and Relief, all termed seceders. A few scanty congregations of Cameronians are still to be found in the county;

ty; a kind of remnant of the Covenanters of the 16th century. A new obscure sect, calling themselves Missionaries, begins to insinuate itself among the lower orders, under the pretence of superior sanctity. It is a misfortune for the poor to have their slender means diminished, for the support of sectarian ministers; more especially as the parochial clergy of the legal establishment are most respectable and exemplary; but it is perhaps useful in the slightly literate state of our peasantry, that the speculative shades of sectarian difference give occupation to their minds, sufficient to banish those ruinous political nostrums, which were disseminated with great industry some years ago among them; and which threatened to extirpate morality, subordination, and religious principles from among the lower orders of the community.

Though bordering with England, there is not a single Episcopal chapel in the county; nor is there any Roman Catholic priest or place of worship; nor any meeting-house for Quakers, Anabaptists, or Methodists.

SECTION VI.—BRIDGES.

BEING intersected by considerable streams and skirted along its whole southern boundary by a large river, Tweed, this county would require numerous bridges for its internal accommodation, and for external intercourse;

course; but its funds for that purpose are far too scanty for building and upholding a sufficient number. Upon Tweed, from where it begins to skirt Berwickshire, to the sea, there are only four bridges, on a waving line of about forty miles; at Leederfoot, Kelso, Coldstream, and Berwick, only one of which, Coldstream, is within the county. Two others are in agitation between Coldstream and Berwick, at the two principal fords by which the Merse communicates with the coal and lime district in the north of Northumberland; at Tweed-hill, or New-water-ford, and at Upsettlington ford. It is proposed to build these of timber, either with stone piers or on wooden piles; but whether funds sufficient can be procured is not yet ascertained. Perhaps it might be worth consideration, whether the Italian flying bridge might be had recourse to at one or both of these places, as vastly less expensive than fixed bridges. The construction and management of a fly bridge is simple and easy; and the method of guiding one from side to side of the river, could be learned in an hour by a woman or child.

Two other bridges between Kelso and Leederfoot would give great accommodation and facility of intercourse; but are not so very necessary as the two just mentioned, which are now in contemplation, because not leading towards coal and lime.

Upon Whitadder, bridges are much wanted at several places, more particularly at the Blue-stone-ford near Churnside, and at Ninewells mill where it unites with Blackadder. A bridge over the Blackadder at Nisbet-mill is much called for, and is now in progress. The ford of the Eye, on the road from the coast to Dunse, is likewise much in want of a bridge. One over the Eden,

Eden, between Coldstream and Kelso, seems highly necessary; though this last situation is locally in Roxburghshire. There may be several other situations, where bridges might prove of material utility; but which must be well known to those having local interest. Those which have been mentioned seem the principal places where they would answer general purposes. The lesser streams are not noticed, because bridges over them, though they would be highly useful in many places, are not objects of such very important considerations as to expence, and may be gradually acquired from the present very incompetent funds.

As the county is fast increasing in opulence, in consequence of rapid agricultural improvement, it is to be hoped that the safety and accommodation of bridges will soon occupy the attention of the landed interest, to whose superintendance alone roads and bridges are by law confided. The commissioners of supply have right to assess the sum of L.148. 2s. 8½d. along with the cess or land tax, for the building and support of bridges within the county. But this is now so utterly inefficient, owing to the decreased value of money, and the increased necessity for accommodation to an improving country, that it deserves consideration whether parliamentary authority ought to be applied for to increase that assessment, according to circumstances, within certain limits.

As all improvements in communication from place to place, contribute largely to the conveniency of the landed interest, both proprietors and tenants, it might perhaps be proper, in any systematic increase of the funds for erecting bridges, to consider of some equitable apportionment of the necessary addition between the landlords

landlords and the tenants of the county. Assuredly all such improvements serve the tenantry, especially in the first instance, more particularly such as have considerable portions of their leases to run. But they all ultimately augment the value of landed property; and whatever burthens may be shifted upon the shoulders of the tenantry, must finally devolve upon the landlords, by deductions from rents at subsequent leases. Upon roads already having turnpike gates, or that may hereafter become turnpike roads, the most equitable manner of procuring additional funds for bridges might be a proportional increase of the toll duties, and by abolishing exemptions. For the greater bridges so much wanted over Tweed, Blackadder, and Whitadder, particularly Tweed, pontages might be levied, against which the chief objection is the expence necessarily attending the collection, as the toll or pontage gatherers must have a living out of the duties. Every toll bar will cost about L.30 for gate and toll house, and not less than L.25 yearly for the gatherer to live upon.

Perhaps a very equitable plan were to admit of farmers who pay not less than L.200 a year of land rent as trustees, and to levy an additional sum of bridge money, one half from proprietors, and the other half from the tenantry on the principles of the property tax. The greatest objection to this apportionment is, that the farmers part would fall upon many of them towards the close of their leases, who, consequently, could not be benefited by the operation of the tax. This might be obviated by a table of proportional deductions and exemptions, during the first ten years, according to the shortness of remaining leases. Supposing the rate were twopence in the pound of rent, half from proprietors, and

and half from tenants, it is believed the produce would be about L.1800 a year, at the present rental of the county. One quarter of this produce might be appropriated towards bridges upon the parochial roads, and the rest remain, as at present, applicable according to the judgment of the Commissioners of supply, on application from the trustees of particular districts. From this fund or revenue a large sum might be borrowed at first for more quickly carrying the object into effect, and an efficient sinking fund set apart for gradually extinguishing the debt. Thus setting aside L.450 yearly out of this new fund for bridges upon parochial roads, together with the present bridge money of L.148:2:8½. this particular department would have a revenue of L.598:2:8½. a year, amply sufficient for that purpose.

Upon the security of the remaining fund L.20,000 might be borrowed for building the bridges so much wanted on the great lines of communication. Besides the interest of this sum there would still remain L.350 a year, as a sinking fund, for reducing the debt. In ten years this sinking fund would relieve nearly L.5000 of the originally borrowed money. By that time likewise, from the progressive increase in rents, and from the proposed expiry of all exemptions and deductions, the fund would probably have increased one half. The yearly sum applicable to parochial bridges would then be L.823, and near L.1300 would remain free for general purposes. Upon this a second L.20,000 might be borrowed, and nearly L.300 a year would remain as a sinking fund to reduce that, and the L.15,000 remaining unpaid of the original debt.

It is needless to prosecute the hypothetical calculation

lation any farther. In course of time, when the county became fully accommodated with bridges, this fund might be applied to other purposes of valuable improvement, such as Rail-ways or otherwise, as should seem proper to the county.

Except in one instance, at Gainslaw, where a bridge has been constructed of foreign fir, and even that bridge is within Berwick bounds, all the bridges in the county are built of stone. The piers and arches, when of any considerable span, are always of dressed freestone. The other parts of common rubble, except the coping of the battlements, which are mostly dressed freestone, sometimes raggled common stone of the country, which form a most formidable obstacle to restive horses and cattle, and even to the wildest sheep. Small bridges and tunnels are often entirely built of common rubble. The celebrated *Pease Bridge*, as it is called, is one of the most singular constructions of the sort in Europe. It is erected over a vast chasm, or glen, with steep abrupt sides, in some places 160 feet deep. Over this a magnificent bridge of four arches was built in 1786. Its romantic situation and stupenduous height afford subjects of admiration to travellers. It is 300 feet long, only 15 wide, and the height, from the bottom of the glen to the top of the iron railing above the parapet, is 123 feet. One of its piers rises from the bottom of the glen 97 feet before the arch springs, and, though of perfectly secure dimensions, seems vastly too slender to support the superincumbent weight, having more of the light airy proportions of an ornamental column, than of the solidity of a pier, yet is assuredly of ample strength. Before the construction of this bridge the road of communication between Berwickshire and the Lothians passed this glen about

quarter of a mile nearer the sea, by such intolerably steep banks as to be almost impracticable for loaded carriages, and often exceedingly dangerous; by means of it the communication for military, agricultural, and commercial purposes, has been rendered comparatively easy and commodious; and it is said that the country owes the idea of this bridge, and the great improvement in the line of road connected with it on both sides, to the talents of a lady, the late Miss Hall of Dunglas. Should the great improvement of the line of this road pointed out by Mr Abercrombie, to be afterwards noticed, be carried into full effect, this bridge will become comparatively useless to the public.

So much depends upon situation, the nature of the banks of the river, and the composition of its bottom, that it is utterly impracticable to give any general idea whatever of the proportional expence of building bridges. Where a bridge abuts upon sound rock, and where the bottom is of the same nature, and easily laid dry, the expences must of course be vastly less, than when both the abutments have to be constructed upon deeply dug foundations, and where the piers have to be built in deep water, that must be dammed and pumped out, and where each must have a deep foundation, perhaps piled at vast cost.

CHAPTER IV.

OCCUPATION.

SECTION I.—SIZE OF FARMS.

THE lands of this county are variously occupied, but farms are invariably let on lease for years, from ten or less, which are rare, to 30 or more. Most commonly 19 years has somehow been adopted long ago, as a kind of magical number in Scots leases, and formerly two and three 19 years, or 38 and 57, were common, now almost universally restricted to a single period of 19 years. The usual circumstances respecting leases of farms in this county will be adverted to in the 7th section of this chapter.

In the occupation of their land by the tenants and by farming proprietors, so generally as to be almost universal, aration and pasturage follow each other alternately, to the great advantage of both. By means of the former rich crops of grain are raised, and abundant store of turnips, clover, and cultivated grasses are supplied for the winter

winter food of horses, cattle, and sheep. By the latter the soil is continually renovated and preserved in vigorous fertility. And by this alternation, the particulars of which will be detailed hereafter, much larger quantities of beef, and mutton, and grain are produced for market than could be derived from the two branches constantly pursued on the same quantity of equal land, in separate farms, or on separate fixed portions of the same farm.

Under this system of alternation, judiciously conducted, it may confidently be asserted that a farm, of 1000 acres for instance, will raise as much grain as one of equal size entirely under perpetual tillage, and will produce, in addition, as much beef, and mutton, and wool, as a separate farm of 200 to 300 acres under permanent grass. If this estimation be well founded, of which the reporter has no doubt, this alternate system is obviously of superior profit to the tenantry in the first place, to the landed interest secondarily, by increased rents, and to the public ultimately and always, in the proportion of at least 25 per cent. beyond what can be produced from the two branches separately pursued on the same extent of equal land.

The effects of this superior system upon the floating and accumulating active husbandry stock of the kingdom at large, upon the facilities for encouraging and supplying an encreasing population, for extending manufactures and commerce, for replacing the men that are lost to the state in war, navigation, and colonization, and for assisting to support the continually encreasing pressure of financial arrangements, must be vast. These effects form the commencement of a solid

system of political arithmetic, in a continually advancing ratio of amelioration, which belongs not to the present object to investigate, and which the reporter gladly leaves to be prosecuted by others more conversant in such studies and discussions.

In a subsequent part of this report it will appear that the estimated land rent of Scotland in 1801 was L.2,341,955. Supposing only one million and a half of this to be derived from land susceptible of the alternate husbandry, a profit of not less than L.375,000 yearly must arise from this system, beyond what could be produced by the separation of tillage and pasturage. And were this system brought to its full efficacy, to which it is fast tending, it does not seem exaggeration to suppose that, in 50 years hence, the land rents of Scotland may reach ten millions, and the consequent advantages of the alternate system to above a million and a half yearly.

The foregoing observations on the occupation of the soil, apply to the lower districts of the county, and the southern slopes of the lower hills, including the arable portions of the interior hills themselves. In the peculiar hill district, the lands are mostly occupied as breeding sheep farms; taking advantage of all the favourable pieces of land, susceptible of cultivation, for raising a little grain, to supply the farmers family, servants, and horses; to afford litter and fodder from the straw during winter, by which dung is produced; to apply that dung to raise turnips, to carry on their sheep stock during winter; and, finally, to produce crops of artificial or sown grasses, for hay and early pasture, and to the great amelioration of permanent pastures.

In

In the neighbourhood of towns and villages various small possessions, from two or three acres or less, to 20 or more, are let on leases of various endurance, but mostly for short periods, to villagers who keep one or two horses, which they chiefly occupy in leading materials for road makers, coals to the other villagers, lime, or any such employment as may occur. The great mass of the land throughout the county is, however, let in farms of every variety of size, from 40 or 50 acres, up to 1000 or more, to tenants on leases of fixed endurance, mostly for 19 years, as already mentioned. Generally the character of farms in this county may be considered as large, insomuch that a farm of moderately good tillage land of 200 acres is considered as too small to form an object by itself, for a farmer of tolerable capital and enterprising spirit. From 400 to 600 acres of such land may be taken as an average farm; and there have been instances, within a few years, of one farmer managing judiciously and profitably above 4000 acres of land, under the alternate system, in four or five separate farms, some of them at many miles distance from his residence. In one instance a farmer, who has three sons established in business, occupies himself near 3000 acres, and his sons about 4000, all under the alternate system of husbandry.

Upon the large estates, the smaller farms are gradually coalescing into larger ones, owing to the greatly less expence of management both to landlord and tenant, as already mentioned under the article of buildings, chap. 3. sect. 2. The smaller farms, which cannot be thus thrown together, owing to separation of property, are fast falling into the hands of spirited farmers, as separate or off farms, partly because these men can give

higher rents, as not requiring a direct living from such farms by themselves, and partly because they do not require dwelling houses upon them from the landlords, as the occupiers live upon their larger farms.

SECTION II.—FARMERS.

THE character of farmers in a large district of country must be various, but those of Berwickshire are very generally most respectable and intelligent, and their success has been deservedly proportional. They have almost universally risen completely above the class of peasantry, in knowledge, education, and manners, assimilating in every respect to the character of country gentlemen. In every corner of the country they are to be seen carrying on extensive and costly improvements, by draining, inclosing, liming, and marling, and by careful and judicious improvements of their live stock, sheep, cattle, and even horses, with all the eagerness and intelligence of commercial speculations, trusting to the certain profits of future years to reimburse their large expenditures with reasonable profit, which they are enabled to do through the sufficiency of their capitals, and the security of their leases, *the former derived from their own successful and intelligent industry, or that of their fathers, the latter from the good sense of the landlords, in seeing their own interests most materially interwoven in the security and success of their tenants.*

It

It is obvious that there must be shades of difference in the character and conduct of a numerous body of men, but the above is the general picture of the farmers of this county. Such as from ignorance, or obstinate adherence to ancient prejudices, which is the same thing, have shut the eyes of their understandings to the advantageous practices so successfully and generally followed around them, and they are very few, necessarily cease to be farmers at the expiry of their leases, as they cannot enter into competition with more enlightened and more successful men, and must either vegetate on the produce of their scanty gains, or look out for more humble objects of industry, better suited to their narrow means, and confined views.

SECTION III.—RENTS.

It may be said that the rent of farms in Berwickshire is universally stipulated for, and paid in money only. In older times, 40 or 50 years ago, rents were mostly paid in farm produce, as barley, oats, and meal, with a small proportion in money, but this is now entirely antiquated, as it forced the proprietors to become in some measure corn merchants, and it answered no useful purpose in other respects, while it sometimes led to disputes respecting the quality of the grain offered in payment. While payments in grain were customary, law or custom had introduced a rule of payment, somewhat like the following, but as the practice has been

long discontinued it has not been very accurately inquired into: The farmer was entitled to select his best grain as seed for the ensuing crops. His farm servants were entitled to the next best in payment of their bolls, or grain wages, and the landlords had right to the next best, in payment of their grain rents. Thus the worst only remained for sale. The rule still subsists, so far as the farm servants are concerned, but it so seldom happens that any disputes arise on the subject, that no instances have occurred to the reporters knowledge.

Of late some unsuccessful attempts have been made to introduce a new mode of payment, in which the amount of the whole, or a part, of the rent for each year, was to be dependant upon the prices of grain, as regulated by the yearly fiars, or average prices, as fixed by the sheriff and a jury upon evidence. The circumstances relative to the fiars will be explained hereafter. Perhaps this mode of payment might answer in districts where the cultivation of grain forms the principal object of the farmers. But in Berwickshire, where the objects of husbandry are various and mixed on every farm, it would require a very complicated system of payment in kind, to be reciprocally fair and advantageous for the proprietors and tenantry. In bad years, when the prices of grain are high, the produce must obviously be proportionally scanty. The farmers may then be, very erroneously, supposed to acquire exorbitant profits, when in fact their much smaller surplus for sale, after payment of servants in kind, maintaining their families and horses, and making the necessary reserve for the subsequent seed, does not leave them nearly so much money from the high prices, as they receive in good years with moderate prices. During the last year of scarcity, 1800-1801,

—1801, a respectable farmer, who was accustomed to sell from 5 to 600 quarters of oats in ordinary years, was barely able to supply his servants, family, and horses, and to sow his land for the ensuing year. In the same season a farmer upon an arable farm in the neighbourhood of the reporter, who employs two ploughs, was unable to send a single bushel of any kind of grain to market. His horses, servants, family, and seed for next crop, completely exhausted his whole produce. These two instances only are adduced, but many such might easily have been accumulated, if thought necessary.

Personal services from tenants to landlords are now utterly unknown in this county. Some small payments in poultry, called *kain*, are, or rather have been, paid by farmers, but even these are fast getting into disuse, as poultry are very injurious to grain crops, far beyond their market value, and farmers are very averse to keep more than are necessary for their family consumption. In some instances resident proprietors bind their tenants to lead a fixed number of cart loads of coals yearly. Even this is now very much out of use, and most reasonably. Farmers keep no larger an establishment of servants and horses than they consider necessary for the work of their farms; and it would be both prejudicial to their interests, and galling to their feelings, to have their servants and labouring cattle called off from important labour, perhaps in the middle of a ticklish harvest or difficult seed time, to supply their landlords with coals, perhaps at the arbitrary mandate of a saucy upper servant. In every village there are professional carters, always willing to be employed.

The ancient bondage of farmers to their landlords for ploughing, sowing, reaping, carrying, and securing their

their demesne produce, for hay making, and various other servitudes, have happily now no existence, and, like the feudal services of war or rapine, under the standards of their lords, are now only objects of history, or of antiquarian research.

Thirlage to the mill of the landlord for grinding of all meal, malt, and flour, consumed in the families of the farmer, and of his servants and cottagers, still remains, but will probably be soon universally commuted into an additional rent upon the farms, equivalent to the real or presumed defalcation from the mill rents, in consequence of its abandonment. The subject of thirlage has been already considered in chap. 2. sect. 2. § 6.

It is utterly impossible to give any tolerably approximated account of the rental value of lands in Berwickshire. The qualities of the soil in different parts of the county, and even in separate parts of the same farm, are extremely dissimilar, and a great part of the comparative value of land, especially for cultivation, depends much upon situation as to altitude, and to nearness to, or distance from, manure and markets. The actual rents not only vary from each other on these enumerated accounts, but according as they have been fixed by old leases, or by recent bargains. In general it may be taken as a rule, modified by quality of soil and elevation, that the more recently let, and the nearer to the Tweed, and the ports of Berwick and Eyemouth, the higher the rent.

In the neighbourhood of the reporter, extensive farms let on lease within the present century, and containing much variety of soil, from very good to extremely bad, but in very different proportions on the several farms, have been let at average rents, varying

ing from one pound to thirty shillings, two guineas, and even up to sixty three shillings, and to four pounds eleven shillings and sixpence an acre. Lands of the same qualities, or these lands themselves, from twenty to thirty years ago, averaged from seven shillings to one pound; and some old leases, nearly expiring, are within these latter bounds. The reporter pays for his small farm, made up of sundry small parcels of land belonging to different proprietors, and taken at different periods from fifteen to six years ago, and consisting of various descriptions of soil, from very inferior turnip land to rich deep free loam, thirty-one shillings and sixpence, two guineas, forty-eight shillings, and so high for a small portion as ninety-five shillings an acre; and every part of it, but the last, would probably now let at an advance of from twenty-five to fifty per cent. Some adjoining small possessions have been let lately on short leases for cultivation, to villagers, for five and six pounds an acre. In spring 1807, eight pounds a-year per acre, for five years, were demanded, and seven pounds were offered and refused, for a large grass field of rich loam, under a fixed rotation for improvement; the taker to be allowed to carry off the straw, and the letter to pay for lime to the turnip crop. Fifteen years ago, in 1795, the total yearly rental of the county was estimated by Mr John Home at L.112,000. In a statistical table of Scotland for 1801, published in 1806, the rental of Berwickshire is stated as L.118,000. By the accounts of the property tax, as made up for the year 1806, the entire rental, real and estimated, upon leases which had endured above seven years, was L.210,000. By the property tax accounts made up for 1807, the total rental, real and estimated, is advanced

to

to L.226,000. If these four valuations are accurate, or well founded, it would appear that in six years, from 1795 to 1801, the rental had only increased L.6000, while in five years more, from 1801 to 1806, it had increased by L.92,000; and in the year 1807, by L.16,000. It is understood that the property tax for 1808 has been assessed upon the valuation of the former year. But not knowing the data on which the estimate by Mr Home was founded, no certain deductions can be formed from these premises.

An instance has been elsewhere adduced in this report, of the advance of rent produced from the alteration of intermingled property to absolute severalty, ch. ii. sect. ii. in which a small property, for which the reporter now pays L.116. of yearly rent, was let within the memory of man at L.4 a-year. About 60 years ago a farm of 300 acres in the reporters neighbourhood was purchased for L.950. After which its progressive rents, under three successive leases, were L.37. L.50. and L.100. About eleven years ago it was let on a 19 years lease for L.400. The occupier failed in his circumstances, and his creditors let the land for the remainder of the lease at L.615 a-year. Numerous similar instances of enormous rises in rents, since the general inclosure between 1750 and 1760, might have been adduced; but what has been already stated respecting land rents seems quite sufficient.

SECTION

SECTION IV.—TITHES.

GENERALLY speaking, this county, like all the rest of Scotland, is free from tithes; at least in that shape which presses upon agriculture in a way that cannot be foreseen with any accuracy, and which consequently forms an insurmountable hindrance to improvements, and diminishes the rental value of lands which they attach to in a vastly larger proportion than their own amount as a tax.

That ancient provision for supporting the ministers of the church, was commuted about two centuries ago in Scotland, by law, into a fixed modus, or perpetual valuation, to serve as the immutable rule of payment: Out of that modus, as connected with each parish, a salary or stipend is allocated to the minister; and this allocation is mostly fixed in certain measures of grain, which continues to bear some proportion to the increased expence of living, or decreased value of money; and the same authority, the court of tiends, which originally fixed this parochial provision for the ministers, still has power to grant augmentations out of the unallocated free tiends, which are universally impropriated, yet always subject to pay the ministers. To follow out this subject, would lead to a treatise upon a particularly important and abstruse branch of Scots law, quite foreign to the objects of this report.

Almost

Almost universally the tenants have nothing whatever to do with the tithes or tiends, whether as impropriated, or as allocated out of the impropriations for stipends to ministers. In the leases of farm lands, the stock and tiend, the land produce, and the tithe of that produce, are let in cumulo, or conjunctly and indivisibly, to the farmer; who has no concurrence with the clergyman of his parish, but to live with him in good neighbourhood, and to profit by his instructions and example.

Sometimes landlords commit the payment of stipends to their tenants, to whom the ministers receipts become part payment of their rents. The tenant, by special bargain, may be bound to pay the stipend, in addition to the stipulated rent; but the quantum of this payment is so very nearly a fixed appreciable value, at the time of bargain, as to be easily intelligible, and never can produce any inconvenience to the tenant, or any dispute with his pastor. It does not increase with the ameliorations of his farm, neither does it abstract any of the means of fertility.

In some rare instances, where the remedy of this excellent law has been neglected, actual teinds are still exigible in kind, by the lay impropriator; but the law remains open for having them commuted into a modus in money, which is fixed at one fifth part of the free yearly rent, or value of the land, to be ascertained by legal proof, at the period of commutation or valuation, and is unalterable afterwards if the decree is acquiesced in and allowed to become final. The writer of this report rents two small properties that are still liable to the corn tithe only in kind, but which he has bargained for with the lay impropriator, at a fixed money rent or modus,

modus, during the currency of the lease. So far as he can learn, this instance is almost solitary in the county, or, at least, exceedingly rare, and only attaches to exceedingly small parcels of land.

SECTION V.—POOR-RATES, AND OTHER PAROCHIAL TAXES.

In Scotland there are no poor-rates that can be considered as any way analogous to those of England. By law, indeed, every parish is bound to maintain its own helpless poor; helpless from age, disease, or infancy; but no assistance is ever asked by or given to people who are able to earn their own subsistence; and the aid afforded to the helpless is rigidly commensurate with the necessity. The money, therefore, which has to be raised yearly in each parish, on account of the poor, is exceedingly moderate, and falls very lightly upon individuals. It is assessed yearly by the heritors or proprietors in each parish, and is paid, in proportion to the valued rent of the lands, one half by the proprietors, and the other half by the tenants.

The salary of the parochial schoolmasters, which in no case exceeds L.22. 4s. 8d. yearly, is raised in the same manner as the poor rate, and paid equally by landlords and tenants. The total amount of both is quite inconsiderable, and scarcely amounts in any instance to twopence in the pound upon the actual rent.

The

The only other parochial tax affecting the tenantry is the road money, or conversion of statute labour, which will be more particularly considered of under the first section of chap. xvi. For the present it may be sufficient to state, that every farmer pays yearly on this account seven shillings and sixpence, as his personal tax, seven shillings and sixpence for each work-house, and five shillings for each established man-servant employed upon his farm. Proprietors pay the same as farmers, for any farms that they retain in their own hands.

Besides these parochial taxes, the landlords pay the cess or land tax, where not redeemed, the ministers stipend, the expences of rebuilding and repairing ministers manses, or parsonage houses, and all the out buildings belonging to these, and churches and church-yard walls or fences. With all of these last enumerated parochial burthens, the tenants have nothing to do legally; but sometimes, by special bargain, these payments, or some of them, are turned over upon the farmers, during the currency of their leases.

SECTION VI.—LEASES.

ALL farm land, either in the arable districts, or on the pasture hills, is in absolute severalty, and generally is in compact arrangement, and is universally let on lease,

usually for nineteen or twenty-one years endurance. At the commencement of spirited agricultural improvements, from thirty to fifty years ago, longer leases were often given as spurs to industry; and it is not uncommon to hear farmers say, that at such and such times, when agriculture was by no means flourishing, they or their fathers might have had leases of such or such lands, for any length of time they might have chosen, at rents that would now be considered as mere acknowledgements of superiority, not a quarter of what is now paid. Some of the old leases were for three nineteen years; but these are now mostly expired. Even yet, where extensive improvements are to be undertaken by the tenant, a thirty years lease is still sometimes granted. In fact, it is hardly eligible, for a person possessing skill and capital, to encounter the toil, expence, and risk of new enclosures, and extensive and costly permanent improvements, unless with such a length of lease as may insure a reasonable profit, or by getting the land at a rent inadequate to its value. During one of nineteen years endurance, he will be subjected to all the trouble and charges and hazards; and all the advantages of his exertions, skill, and outlay, will necessarily be reaped by his successor; or, in other words, by the landlord.

Few men have sufficient capital, to be able to accomplish very extensive improvements in the first years of a lease; and profits, adequate to great outlay, risk, and exertion, are not to be made on small possessions, or during short periods. Landlords, in general, will find extensive improvements better and cheaper done, by intelligent farmers of capital, under the encouragement of leases of good extent, than when executed under

the superintendance of stewards at their own expence. In the latter case, indeed, the improved rent may be procured whenever the improvements are completed; but the large outlay necessary for producing these improvements, will hardly ever be compensated for, by the more immediate return. Stewards, supposing them perfectly faithful, have not the same stimulus of personal advantage, to incite economical management in carrying on improvements, and in the conduct of purchasses and sales, that influence men who act intirely with a close view towards their own immediate profit. Stewards are very naturally anxious to produce striking beneficial changes on the lands committed to their charge, without anxious forethought of the expence attending these; and both they and their employers are very apt, in forming their estimates of expence and produce, to neglect considering the rent that might have been procured for the lands in the mean time. It often happens that the productive or rental value of land may be increased ten-fold by improvements, while the outlay, perhaps, is not one-fifth part compensated for by the change.

At the commencement of a new lease, the landlord generally puts the farm buildings, gates, and fences, into satisfactory condition for the new tenant, or causes that to be done by the removing tenant. In this last case it is customary to estimate, by neutral persons mutually chosen, or arbitrators, assisted by tradesmen, the sum necessary for this purpose, when the removing tenant is so bound by his lease; and the sum awarded is paid by the removing to the entering tenant, who has it thus in his power to repair according to his own judgement,

judgement, adding what he may think necessary and proper from his own funds.

As modern husbandry requires greatly more accommodation, and as affluent capital is intitled to superior habitations, it is often bargained for upon new leases, that the tenant is to be allowed a fixed sum out of the succeeding rents, to erect a convenient and substantial dwelling-house, and requisite farm offices and accommodations of all kinds. This sum usually amounts to the full expence of an agreed upon plan and estimate, deducting the estimated value of the old materials, which are taken in part payment by the contractor, and deducting the sum arbitrated between the old and new tenants for repairs, in implement of the conditions of the old lease, and likewise leaving the whole charge of carriages, of stones, wood, lime, and other materials, upon the tenant; though, in some rare instances, the landlord takes the whole cost upon himself. The tenant, of course, is taken bound to keep and leave all buildings, gates, and fences, in good and sufficient repair, during and at the end of his lease; conditioning that the landlord may cause execute such necessary repairs at the expence of the tenant, if he neglects.

Where necessary, new or additional fences are made, either by landlord or tenant, according to bargain; and which the tenant must protect, rear, and manage in a proper manner, and must leave in good condition at his removal. Almost universally all straw grown, or manure made, upon the farm, are conditioned to be expended upon the land; and these articles, in the last year of the lease, are to become the property of the landlord or his new tenant, so far as not expended. Some latitude is permitted in the neighbourhood of towns

and large villages, for the disposal of straw to cottagers, or to people who keep cows and horses; but, in this case, the tenant is bound or understood to replace this effectually, by a proportional quantity of purchased manure, which he will always do for his own interest, if a person of judgement, except perhaps at the very close of his lease, when only, to such tenants, any such compulsatory clauses are at all necessary for the interests of landlords, unless where, unfortunately for both, disputes have arisen between landlord and tenant. A clause is often introduced, prohibiting the employment of straw as feuel; a remnant from ancient days, that can now have no useful tendancy, unless in case of litigious disputations, which seldom occur; and such barbarous conduct now, would infallibly subject the tenant to heavy damages in a court of law, even though not bound by his lease.

Entries and removals are, for the most part, at the term of Whitsunday, when the new or incoming tenant gets possession of the houses and grass lands of the farm, and acquires all the rest at the separation of that years grain crop from the ground; that is, after harvest home. He likewise usually has the privilege of sowing clover and ray-grass seeds along with, or among the way-going grain crop, which belongs to the removing tenant. When that permission is not stipulated for in the old lease, the incoming tenant must make the best bargain he can, to obtain the permission of his precursor. The removing tenant retains the use of the barns and rick yard, for securing and thrashing out his last crop; but must thrash his grain regularly, so as to supply the horses and cattle of the new tenant with straw. This indispensibly necessary accommodation is provided for

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in the executive practice of the Scots law; as the Sheriff, who is judge ordinary of the county, or his substitute, upon complaint from the new tenant, will summarily compel the removed tenant to thrash regularly; and, on failure, will grant warrant to the new tenant to do so, for his own necessary supply, at the expence of the old tenant.

As thrashing machines are new contrivances, no complete system has yet been devised for thrashing out the crop of the removed tenant where these are employed. He must of course keep a confidential servant at the farm, to take charge of thrashing the crop, and sending its produce to market; and must consequently have a cottage for that person to live in, and stabling for such horses as may be requisite for these purposes, unless the new tenant has bargained to do both. But for the thrashing part, more especially if the machine is driven by horses, he must make the best bargain he can with the new tenant. It is a tolerably common practice, on these occasions, for the new tenant to receive a twenty-fourth or twenty-fifth part of the thrashed grain, in full payment for the expence of thrashing; which used to be the allowance to barnmen, when flails were used in this operation. The confidential servant of the removed tenant generally has one or two horses belonging to his master, for carrying the grain to market; and which generally assist the new tenant on the farm, when not employed on the road.

Sometimes by the stipulations of the old lease, the new tenant acquires right to a certain proportion of the arable land, at or before the Whitsunday of his entry, for fallow, or turnips, or both. When that clause happens to have been omitted, the new tenant must endeavour to

bargain for permission with the way-going tenant. As new leases are generally granted half a year or more before the expiration of the old, access ought, if possible, to be had to the land intended for fallow, immediately after the harvest preceding removal; as a winter ploughing, and one in early spring, are of great importance towards effectuating a well wrought fallow, on which the fertility of after years most materially depends.

Where the landlord has any plantations on the farm, or is to make any, their fences are constructed, taken care of, and supported, entirely at his expence and risk. Power is always reserved by the landlord, to search for and carry away stones and minerals of all kinds, and to fell and remove trees, on payment of surface damages to the tenant. Sometimes the landlord reserves the privilege of hunting, shooting, and coursing upon his own grounds, and of granting permission to others.

For the most part, the leases in this county are sufficiently liberal in their conditions as to the succession of crops, and other circumstances in the management of the land, during much the greater part of the occupancy; and the tenant, in general, is only bound to certain limitations in these matters, in the three, four, or five latter years of his lease, as to the extent of land to be kept in grass, as to the rotation of crops, and as to the age of the grass that must be left upon the lands at the end of the lease. The only possible objection to this arrangement arises from the utter impossibility, which sometimes occurs unavoidably, of complying with these conditions even with the very best intentions, and most strenuous endeavours of the tenant, to fulfil them literally and fairly. He may have sown off a sufficient portion of land, in the very best condition,

condition, and with the best grass and clover seeds, so as to comply, to the best of his power, with the conditions of his lease. But circumstances absolutely beyond his controul, in the seasons, or the condition of the grain crops, may prevent the grass seeds from vegetating, or may suffocate them between spring and harvest. Grass land may cease to be productive, in the second, third, or fourth year, by the plants dying out, or the soil becoming covered by fog or mosses. In the former case, it seems hard to load the farmer with penalties for a misfortune which he could not avoid: In the latter, it is absurd to force him to keep the land in an unproductive state, for landlords may rest assured, that land acquires no additional value or fertility, while it remains in bad or exhausted grass. Besides these particular conditions, one general clause of managing during the whole lease, according to the rules of good husbandry, universally prevails. Sometimes this is more particularly expressed, by debarring any two subsequent crops of white corn, without the intervention of fallow, turnips, pulse, or grass, and stipulating that the turnip and pulse crops shall be sown in drills.

Such, in general, are the highly liberal conditions which are contained in Berwickshire leases. Yet, in some rare instances, rigid limitations bind down the tenants to strict rotations of antiquated and exploded practise; to fixed quantities of grass land and fallow, during the whole currency of the lease; and to absurd, unprofitable, and expensive modes of cultivation. This has the effect of completely fettering and repressing the ingenious industry of the farmer, who is thus obliged to look enviously at his neighbours, who are flourishing around him, by the successful adoption of improved

modes of husbandry, while he is compelled to jog on in trammels, and dares not aspire to share the wealth that is tantalizingly placed almost within his grasp. And all this, without the smallest possible advantage to his landlord, present or contingent; whose interests would be as effectually secured from any deterioration of the soil, by judicious limitations during the last three, four, or five years of the lease. In such cases, the farmers may be accounted blameable themselves, for agreeing to such improper conditions; but these plans were considered good husbandry, at the times of bargaining, and it is hardly equitable to push the rigid penalty of agreement, where no injury can possibly be sustained on the one side, and great advantages might be reaped on the other, by liberal relaxation from such ill judged limitations.

In some rare instances, in the arable districts, particular fields, or small separate farms, usually led or detached ones, are let on lease, under the exclusive restriction of pasturage. But in no instance is the farmer bound to manure the grass land, perhaps the most injurious system that could be devised in a tillage or arable district. Of this practice, as a system in husbandry, there is hitherto no experience in Scotland; where there does not exist that vast demand for hay, which claims such extraordinary protection for meadows in some parts of England; neither is meadow or old grass land hay so much in repute in Scotland. Round gentlemens residences, perennial grass land is occasionally mown, for supplying hay to their own stables. But sufficient rest and recruit is always allowed, by several years pasturage, to repair any waste of fertility that may have been occasioned by the hay crop.

Landlords,

Landlords, in general, are anxious to prevent their tenants from having power to subset their farms, or even from assigning their leases in prospect of death. In consequence of this prohibitory clause, by which assignees, legal and conventional, are excluded, as all leases are considered heritage by the Scots law, they must necessarily fall, on the death of the original lessee, to his eldest son, or nearest male heir. Consequently, all such leases are in the nature of strict entails during their currency. In ancient times, when the possession of land was intimately connected with the military system of the feudal law, this restriction might be perfectly expedient and necessary. Even long afterwards, while husbandry never enabled its practitioners to aspire above the abject state of drudges, this limitation could not occasion any particular hardship to the younger sons or the daughters of the tenantry, who were all born to hard labour, with no prospect whatever of acquiring any fortune, or of bettering their condition in any respect. As farming is now necessarily situated, in improved and improving districts, requiring large out-lay of capital, in stock, implement, seed, and manure, and in various expensive improvements, the continuation of this antiquated system, now absolutely useless, seems inequitable; as prohibiting tenants from making adequate provisions for their younger sons and daughters; or, if they have no children, from selecting among their relatives, those most necessitous or most deserving of their posthumous bounty. It likewise tends much to repress a spirit of active speculation in agricultural pursuits; as a person of considerable skill and capital might improve a series of farms, were he enabled to dispose of his leases, after having effectuated permanent

permanent improvements, and might then remove to a new-improveable farm.

By excluding legal assignees from the benefit of current leases, besides repressing the spirit and skill of men of small capitals, by withholding a most material source of credit for carrying on improvements, landlords secure to themselves, in cases of bankruptcy, the whole benefits of improvements, to the exclusion of *bona fide* creditors, from whose money perhaps the farms had been improved. As landlords are already entitled to hypothec by law, or absolute preference over the whole stock and crop of the land, for payment of rent, and can demand ample security for due future payments, from creditors entering into possession of the leases of bankrupts, where the excluding clause does not exist, all farther conventional advantages, in favour of landlords, seem unreasonable, and have an appearance of undue preference, to the manifest injury of creditors at large.

As, in Scots law, leases of land are considered as *heritage*, or in the nature of real rights, it may be worthy of consideration, whether they might be placed on the same footing with other heritable deeds by special record, so as to secure their absolute possession against heirs of entail, singular successors or purchasers, and against creditors of the landlord adjudging for heritable debts. On this principle, leases might become sources of credit to industrious farmers, by being pledged or mortgaged, for money borrowed to carry on improvements. Feus, which may be deemed perpetual leases, are thus secured, and can be so employed; and no solid reason appears, why leases of limited endurance should not enjoy similar advantages. The farther investigation

tion of this subject would lead to legal discussion, for which the reporter is neither competent nor inclined.

Besides farms, properly so called, some portions of land, round towns and villages, are usually reserved by the proprietors, and let out in small possessions to villagers, who keep one or two horses, which they mostly employ in leading coals and lime, or stones for making and repairing roads, or in various other ways, for hire. These small possessions, generally speaking, are under very wretched management; as the attentions of their occupiers are so much taken up by their more profitable concerns, that they can neither give the necessary labour to their land, nor in its proper seasons. Their rents, however, are almost universally higher than could be afforded by regular farmers, who must expect some profit from the land; while the small occupiers only look to the necessary accommodation for their horses, and employment for them when hired work becomes slack. At first view, this might seem an argument in favour of small farms, as more profitable to the proprietors. But those who are intimately conversant with country affairs, in districts merely rural, will at once perceive, that the number of such possessions, so as to pay any adequate rent, must be strictly limited to the demand, and in proportion to the extra work which can be procured for the horses of their occupiers. It is not, however, the province of the reporter to enter into controversial discussions, but merely to state matters as they actually exist, in the county under review.

Small farms are usually attached to *grist* mills, for the accommodation of the millers horses, and are let along with the mills, on leases of ordinary endurance. These farms are cultivated, for the most part, in a superior manner,

manner, owing to the large proportion of manure afforded by the expenditure of the mill waste, and to the extraordinary strength of men and horses, that can be applied for work at all seasonable times; as millers necessarily keep establishments of servants and horses far beyond what is requisite for their lands alone.

In former times, when tenants seldom possessed any capital, it was customary and indispensibly necessary to condition for the payment of rent at a long period after entry, that the tenant might be able to derive the means of payment from the produce of his farm, which required every exertion of his slender means and scanty credit, to stock and sow. Thus, entering at Whitsunday, and having no crop whatever to reap in that year, the rent, for the first half year of occupancy, did not become due until Candlemas twelvemonth, or twenty-one months in whole, after entry, and all future payments were due half yearly thereafter, at the terms of Lammas and Candlemas. Hence, upon expiry of the lease, and at removal, the tenant still had three half years rents to pay; but, for the security of which, the landlord held his legal hypothec, or absolute preference upon the stock and implements of the farm, and upon the growing crops of the way-going year. This mode of payment was technically called *back-rent*, as the rent was always considerably in arrear.

For the most part rents are now bargained to be paid much earlier after entry. Thus, entering as before at Whitsunday, the first years rent becomes payable at the first Martinmas, only six months after, but it is not usually exacted until the subsequent Candlemas, or about nine months after entry. The second half years rent becomes due at the ensuing Whitsunday, one year after entering into possession, and payment is customarily indulged

dulged till Lammass, 15 months after entry. In this mode, by a kind of tacit agreement, or custom of the country, an indulgence, grace or usance of three months, is allowed to the tenant, beyond the strict letter of his bargain. This custom is gradually falling into disuse; and most probably rents will soon be expected to be paid with the same punctuality as the interest of borrowed money, or dividends from the public funds; neither is the expectation altogether unreasonable. The above mode of payment, in contradistinction to that before mentioned, is termed *fore-rent*, or fore-hand rent.

For the information of English readers it may be proper to remark, that the Scots terms of the year, as Whitsunday, &c. here alluded to, as connected with agriculture, are all fixed periods of the year, and not moveable as in England. Whitsunday term, for payment of the interest of borrowed money and land rents, and for entry and removal to and from farms, falls upon the 15th day of May. Old Whitsunday for servants is the 26th of the same month. Lammas day, for payment of rents, is the 1st of August. Martinmas, for similar purposes with Whitsunday, is the 11th of November. Old Martinmas, for servants, on the 22d of the same month. Candlemas, for payment of rents, is the 2d of February.

In extraordinary instances of bad seasons injuring the crops, or the sheep and cattle of the farmers, or in cases of peculiar misfortunes, the wisdom and humanity of landlords must direct any extraordinary indulgence to their tenantry, in regard to the payment of rents. It belongs not to any individual to advise, nor perhaps could any general and equitable principles of guidance be

be devised for the purpose, were such competent or proper.

In the ancient practice of the Scots law, rents became voided for that particular crop on which any completely destructive misfortune happened, which was termed *damnum plus quam tolerabile*. But in the present situation of the country, and as farming is now carried on, such ruinous circumstances can hardly be supposed to occur, and no instances are known to the reporter of the application of this law; it is therefore considered sufficient to give this hint of its having once existed.

Where a tenant has the prospect of very expensive improvements in breaking up rough old pasture, incumbered with numerous large stones, of draining extensively, of inclosing and sub-dividing at his own expence; in short, where a comparative waste is to be converted into a well regulated farm, the indulgence of a long day for payment of rent is often stipulated for, but it is now usually limited to 18 months instead of 21; sometimes only 12 are allowed.

The foregoing observations chiefly apply to the arable part of the county, which is infinitely the most important, and where that particular system of husbandry prevails that is chiefly meant to be detailed in this report. In the hill district, appropriated to breeding sheep farms, principles of management somewhat different take place that do not materially differ from those of other hill lands, and which may be found detailed in the reports of Roxburgh, Selkirk, and Peebles shires.

After these detailed observations respecting the usual tenor of leases in Berwickshire, it seems quite needless to load this report with transcripts from special leases. Several of these, under different circumstances, will

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be found recorded in the former reports of this county, to which those who are inclined to compare the ideas of former and present times may have recourse.

Several circumstances relative to the connexion between landlords and tenants will be found already detailed in chap. 2. sect. 1. under the general head of management of estates, and do not, therefore, require to be recapitulated here.

SECTION VII.—EXPENCES AND PROFIT.

It is not understood to have been at all the intention of the Board that each reporter should examine into the private concerns of individual farmers in filling up the subject of this section. At the same time it certainly is extremely desireable that the Board should be enabled to form such a general idea of the expence of cultivation, and of the income to be derived therefrom, as would satisfy the most sceptical, that the profits of the farmer do not exceed what he is justly entitled to, from the application of a considerable capital, conducted with skill, and managed with economy and industry.

By comparing, also, the general expences and profits of various districts, much advantage, in several respects, may be reciprocally derived. Thus it has been suggested that an acre of good turnips is averaged at L.5 in Berwickshire, while in Norfolk the average value is considerably

considerably less. It is natural to enquire whence the difference arises, whether from a better system of cultivation, from a greater quantity being produced, from a more profitable mode of application, or otherwise? Thus likewise, the annual expence of a farm horse in Berwickshire is stated at from L.27 to L.30, while in Kent it is said to be above double. What is the cause of so great a difference, and is the additional expence compensated by the ability of performing more work?

To explain these important subjects of enquiry would require careful investigation of the subjects proposed for investigation, in the several districts referred to. On the subject of turnips, the reporter is led to conclude that the quantity cultivated in Norfolk more fully answers the necessary demand than takes place in Berwickshire, as he knows that breeders and feeders of sheep, both in Northumberland and Berwickshire, are annually obliged to hire turnips in East Lothian. Yet he has known good turnips, even in Berwickshire, given away for nothing; and he was informed by a Yorkshire farmer of a similar bargain having very nearly gone off on a dispute about which party, the giver or receiver, was to be at the expence of the temporary fences. One cause of high prices for turnips in Berwickshire and the northern part of Northumberland, is the prevalence of clay soil, unfit for turnip culture.

In regard to the comparative expence of horses in Kent and Berwickshire, it seems highly probable that those of the former are extravagantly kept, for the reporter never saw more than a load of hay, or 18 hundred weight, brought to the London market by three or four

strong well fed Kentish horses, and the same quantity would be considered as a very easy draught for two horses in Berwickshsre. He is ignorant of the ordinary team, or days work, on Kentish farms, but in Hampshire, the next adjoining county, has seen four strong waggon horses making slow work in ploughing light shallow soil, through which a decent single horse might have drawn the plough with perfect ease, and full effect.

In attempting to comply, as far as possible, with the directions contained in the plan for the reprinted reports, regarding this difficult and delicate part of the enquiry, it is proposed to give an estimate of the expence, produce, and profit of an actual farm of various soils under the alternate system; as this estimate will not only serve to give a distinct general picture of the Berwickshire mixed husbandry, but will also, in some measure, explain the subject to which this section is appropriated; it was formed, principally, with a view towards making an offer for a small farm, in prospect of soon becoming vacant, and has been selected as containing a variety of soils; moderately good turnip soil, croft land, or rich free loam, and strong clay.

The reporter is fully aware of the difficulty of forming any such estimate, so as to bear critical inspection, and of the extreme difference in a great variety of the enumerated particulars, both as to produce, prices, and expence, in a succession of years, and in different situations. But he has access to know that the general result here given, upon an average of several years, corresponds nearly with the actual balances in the farmers

books upon much the greater part of the land. A part of the estimate, of course, from the circumstances attending its formation, was hypothetical.

1. *Charge or gross yearly expences.*

	£.	s.	d.	£.	s.	d.
Rent of 211 Acres, averaged at L.2. 7s. 4d.	510	0	0			
Assessed and parochial taxes	12	10	0			
Property tax	25	10	0			
Seed, calculated considerably beyond average selling prices	150	0	0			
Labour, viz						
Stewards wages, actiog as sheep herd	35	0	0			
Three hinds, at L.32	96	0	0			
Hedger, half the year.....	15	0	0			
Cow herd boy.....	10	0	0			
Six horses at 2s. a-day each pair.....	164	5	0			
Harvest work 84 acres at 15s.	63	0	0			
Summer work, hoeing, hay making, &c....	40	0	0			
Barn labour.....	12	0	0			
Tradesmens accounts, as joiner, smith, saddler, &c.	20	0	0			
Insurance, tear & wear, & interest on stock	60	0	0			
				515	5	0
Manure, especially lime, yearly average.....				50	15	0
Total yearly charges, nearly L.6 an acre				1264	0	0

2. *Discharge, or gross yearly produce.*

A. Turnip Soil, 135 Acres in 5 Breaks.

	£.	s.	d.			
1 Break, 27 Acres, Turnips, averaged at L.4	108	0	0			
2 —— 27 —— Spriog wheat, 27 bush. at 7s.	255	3	0			
3 —— 27 —— Young grass, ...L. 8	216	0	0			
4 —— 27 —— Second year .....L. 4	108	0	0			
5 —— 27 —— Oats, 54 bushels.....3s. 4d.	243	0	0			
				930	0	0

B.

B. Croft, or Rich Loam, 24 Acres in 4 Breaks.

	£.	s.	d.	£.	s.	d.
1 Break, 6 Acres, Turnips, averaged at L. 6	36	0	0			
2 —— 6 —— Wheat, 33 bushels, ...7s.	75	12	0			
3 —— 6 —— Young grass.....L.10	60	0	0			
4 —— 6 —— Oats, 66 bushels.....3s. 4d.	66	0	0			
				237	12	0

C. Clay Soil, 32 Acres in 4 Breaks.

1 Break.	4 Acres fallow	0	0	0		
	4 —— Beans, 24 bushels...5s.	24	0	0		
	Bean straw, valued at.....	12	0	0		
2 —— 8	Acres wheat, 36 bushels .....7s.	100	16	0		
3 —— 8 ——	Young grass.....L.8	64	0	0		
4 —— 8 ——	Oats, 54 bushels..... 3s. 4d.	72	0	0		
					272	16

D. Miscellaneous circumstances.

1 Coarse unimproveable pasture, 20 Acres at L.2	40	0	0			
2 Straw yard, wintering cattle, &c.....	20	0	0			
				60	0	0
Total gross produce, averaging L.7. 2s. $2\frac{1}{4}$ an acre.....				1500	11	0

In comparing these two estimates the yearly average profit appears to be L.236. 11s. or about L.1. 2s. 5d. for each acre, besides a great variety of articles of family consumption produced from the farm, as pigs, poultry, eggs, butter, cheese, &c. But on the other hand the personal and family expences of the farmer have to be deducted from the profits. It is farther to be noticed that a large portion of the land included in this estimate had been taken on lease 14 years ago, and is included at the actual rent, but which, if estimated at the rents now given in the neighbourhood, and actually assumed in this estimate for the additional land then in

prospect, would reduce the average yearly profit here calculated to L.100, or about 10s. an acre.*

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* It may be proper to observe, as an additional inducement for careful investigation on this head of inquiry, that an able writer on husbandry, Doctor Coventry, has divided agriculture into three branches, 1. The economical; 2. The ornamental, and 3. The profuse.* Hence the expence attending agriculture is a subject of peculiar importance, for unless it is carried on economically, the individual at least must suffer. Though some allowance may be made for ornament, none can be admitted for profusion. In no branch of industry is strict and continued economy, in the proper application of labour, both of people and horses employed, and in the application of produce to the maintainance of stock, both labouring, rearing and fattening, more indispensibly necessary than in agriculture. As, in every one of these circumstances, negligence, laziness, and profusion are certain to take place, unless the most guarded superintendence is perpetually on the watch. It is a common country saying, were a person to count the cost before hand, he would never put plough in the ground.

* See the Introductory Discourses to his Lectures on Agriculture and Rural Economy, p. 55. et seq.

CHAPTER

CHAPTER V.

IMPLEMENTS.

SECT. I.—PLOUGHS.

As the reporter is not much acquainted with the technical and mechanical circumstances connected with the rules adopted in the construction of ploughs, and has not had an opportunity of acquiring these from the common country plough wrights, he finds himself under the necessity of omitting the investigation of the several sub-divisions of this section, as contained in the plan for the reprinted reports. This, he hopes, is of the less consequence, as the implements of husbandry used in this county are few, and perfectly simple in their construction. Without, therefore, entering into minute details, he shall endeavour to give a general and popular account of those in common use.

The improved swing plough, having the beam secured by a chain, which carries back the draught almost to its body, with a curved mould board, and feathered sock, is almost universally used. This plough is believed to have come originally from Holland or Flanders into Yorkshire, where it is said to have been called the Dutch plough. On its first introduction into Scotland, it was known by the name of the Rotheram plough; and having been very materially improved by a plough wright in Berwickshire, named Small, it has long been very deservedly denominated from him "*Smalls plough.*"

This is a very simple and efficient implement, of cheap construction, light draught, and easy management. Its chief excellence is in the structure of the mould board, which is of cast iron formed upon a uniform model. The peculiar form of this is of extremely difficult description, so as to be intelligible, being composed of several curves which soften into each other. At its fore part it is an exceedingly sharp wedge, so as to insinuate between the fastland and the *plit*, or furrow slice, with the least possible resistance; the wedge gradually widens backwards to separate the plit effectually, and it spreads out considerably wider upwards, so as to turn over the plit. In these operations it is assisted by the feathered sock, which cuts out the bottom of the plit at such depth as may be regulated by the muzzle. The muzzle, or bridle of the plough, is so contrived that it may be set to work deeper or shallower, according to the nature of the soil and the pleasure of the ploughman, and to take broader or narrower plits according to circumstances. All the surfaces which come in contact with the soil are cast metal, or iron, by which the facility of draught is greatly promoted.

It

It may be proper to give a short account of the introduction of this singularly useful and economical implement into Berwickshire, from whence it has been adopted into all the well cultivated districts of Scotland, and many parts of the north of England. About the year 1764 very little was known in Berwickshire respecting the principles of construction of wheel carriages, and still less of the mechanical principles of the plough, good ploughs and carts being then purchased from Northumberland. At this period James Small, then a young and ingenious mechanic, who had spent some time in England for improvement, returned to Berwickshire, his native country. His merit becoming soon known to John Renton, Esq. of Lammerton, a zealous promoter of agricultural improvements, that gentleman settled Small at Blackadder Mount, erected all the necessary buildings for smith and carpenters shops for carrying on the manufacture of ploughs, carts, and waggons on a considerable scale, and set him agoing with the indispensible assistance of cash and credit. Small continued for many years at this place in full employment, often employing 20 or more carpenters, and six or eight blacksmiths, constructing ploughs, carts, waggons, and other implements of husbandry, both for this county and other parts of Scotland, his ploughs especially being much admired and sought after, and continue unrivalled to the present times, though now constructed by an infinite number of plough wrights in all parts of the country. Besides the plough, Small made material improvements on the construction of harrows, rollers, and fanners, or winnowing machines.

The old Scots plough, with a straight timber mould board, of greatly more obtuse angle, with a pointed

sock, and having a long cumbrous beam, was partially used only a few years ago, but is hardly now to be seen any where. Even those that were used of late years, were very much reduced in size and weight, and had their beams much shortened, so as to fit them for the two horse draught. Some old farmers preferred that plough for breaking up old grass land, provincially *lee*, as it set the plits more upon edge than could be done conveniently by Smalls plough, especially when the plits or furrow slices were made broad. But by taking a plit of moderate breadth, about equal to its depth, Smalls plough answers equally well for this purpose, and is much superior for all other work. Perhaps for breaking up coarse land, much encumbered with the roots of whins and broom, and with large stones, the Scots plough may, in some respects, be more eligible than Smalls: But for this purpose, whatever plough is used ought to be of uncommonly strong construction, so as to be able to encounter severe hardships without breaking.

In ploughing very strong clay soils, the first furrow for fallow, three horses are sometimes put to the plough, but very rarely. In this case two horses go abreast as usual, and the third is yoked in length before the furrow or off side horse. For this purpose the horse tree is made of unequal arms, so that the single horse has an advantage lever to enable him to draw against the other two, which pull at the shorter arm of the swinging beam, or horse tree.

In driving the plough the ploughman, who of course walks between the two stilts, or plough handles, uses either whip reins, one to each horse on the opposite sides, or he has common long reins reaching to the stilts,

stilts, and a single whip rein between the two horses. A driver is never to be seen with a plough throughout the whole county.

A plough having a mould board on each side, called the double mould board plough, is used for forming and splitting drills, and for earthing up rows of potatoes, turnips or beans. The construction of this plough is perfectly simple; and the mould boards are mere common deal boards, often fixed upon hinges so as to admit of being set wider or narrower, according to circumstances; and one of those boards, the near side one, is usually made to take off occasionally, for gathering the earth from the drills of potatoes, turnips, or beans, into the middle between the rows.

No trenching, draining, or road ploughs, nor any wheel ploughs, are at present used in this county. Many years ago the Norfolk wheel plough, and a Norfolk ploughman, were employed by the late Dr Hutton of Slighs-houses, on the first introduction of the improved husbandry into Berwickshire; and were afterwards, both the plough and the individual labourer, used for some time by Mr Fordyce of Ayton. It were extremely impertinent to criticise an implement which the reporter has not seen at work, but he believes that it was not found universally applicable in grounds containing inequalities of surface, and numerous stones, both of which were apt to force it, by encountering the wheels, from its proper direction. Besides, he is apt to believe that the chief use of the wheels, in favourable soils, is to relieve the ploughman from attention and labour, by adding considerably to the draught of the horses.

The draining plough, or *Mole* plough, was tried some years ago by Mr Fordyce of Ayton, and laid aside because

cause, on the lands where he used it, there were so many stones under the surface, and so many tree roots, as to prevent it from answering the intended purpose. The reporter has seen very highly beneficial improvements from its use in Cambridgeshire; and has every reason to believe that it may one day become a most profitable implement in Berwickshire, more especially if used by means of a capstan, as now practised in some parts of England, by which the injury to the land, occasioned by the feet of the draught cattle, in the ordinary way, is entirely obviated.

SECTION II.—HARROWS.

THE harrows in common use are abundantly simple, and require no particular notice. For assisting to break and reduce coarse old lee, or land encumbered with roots of whin and broom, or with much couch grass, a break, or peculiarly strong and heavy harrow, is employed, and a very light harrow is usual for covering grass seeds, among corn already above ground. Some attempts have been made to improve the construction of the common harrow, upon what appears to be mathematical principles, at least on paper. But the minutely particular disposition of the rails and teeth seems of very little real importance in practice; and the judicious application of their powers is what is most to be depended upon. Each pair of harrows is connected together

gether by bows and long iron bolts, to prevent them from riding, and to allow of free play. One man always drives two horses and two harrows, sometimes three, with long whip reins, walking behind the harrows. He thus has it in his power to see, and disengage them from, any obstructions, and is in much greater safety than when walking at the horses heads.

SECTION III.—ROLLERS.

THE roller in general use is quite simple; and is constructed of timber, stone, or cast metal, according to the opinion of particular farmers. It often has an old cart body fixed upon its frame, that it may occasionally be made heavier.

Some years ago the reporter introduced, from Lanarkshire, a new form of roller, formed of two short cylinders, revolving freely on a common axle. Its peculiar advantage is in turning short, when the two parts or divisions revolve different ways, like the wheels of a cart, and do not tear up or drag the surface of tender soil. Though an obvious improvement it has not been copied. In the west of Scotland, which abounds in iron founderies, the rollers are often made of cast metal, called *yetlin* in Scotland; and many of them are divided into two, like that just mentioned, sometimes they are in three divisions.

No other kind of roller is used, except a fluted one, commonly attached to the turnip drill machine, which will be noticed in the next section.

SECTION

SECTION IV.—DRILLS.

For sowing turnips, a compound drill machine, which sows two drills at once, is very generally used. The cylinder of its attached roller, is mostly fluted circularly, to adapt it exactly to the width of the drills, and to keep it from swerving in its motion; but those made lately have the roller simple, and a low wheel at each end. These exactly stride the breadth of two full drills, the points or ridges of which are flattened by the roller, while the wheels move in the hollow drills beyond both. Two hollow coulters, directly behind the roller, form the seed slits, and two tin tubes convey the seed from two cannisters, which deliver the seed into funnels at the upper ends of these tubes. A crank at the outer end of the axle of the roller, moves by means of an iron rod, another crank at the end of the axle on which the cannisters are fixed, on purpose to shake out the seed. Two very small rollers are attached behind the drill, which press down the edges of the seed slits, cover in the seed, and assist to prevent the too rapid evaporation of moisture from the soil. A well dressed turnip field, finished in the seed process by this implement, in the hands of an expert ploughman, has a very complete garden-like appearance, and the implement is very expeditious in its operations. It is easily drawn by one horse, and managed by one man walking

walking behind with whip reins, and can readily sow from eight to ten acres in a day.

Dissatisfied with the uncertain delivery of seed, from the tin cannisters commonly used in these machines, the reporter had one constructed upon different principles, which has completely answered his expectations for the three last seasons. The seed is placed in two shelving fixed hoppers, in the bottom of each of which a small brass cylinder revolves in a tight slit or open groove. By thimbles cut in the faces of the cylinders, the seed is regularly delivered into the funnels at the upper ends of the tin tubes. The motion is given by a train of toothed wheels of cast metal, reaching from the axle of the flutted roller, to the axle which drives the two brass cylinders. By this simple contrivance, the person who directs the machine always sees when the hoppers require more seed; while in the ordinary machines, the cannisters are concealed, the machine may often proceed a long way, while one or both cannisters have no seed to deliver, or the lid may slip out from one or both cannisters, and all the seed be spilt uselessly on the ground.

On many farms, drill machines for sowing turnips, sow only one drill at a time; but these do not require any particular notice. Whatever species of drill machine be used, whether single or double, the seed is sown in regular straight lined rows, at from 27 to 30 inches distant.

Upon the farm cultivated under the direction of Mr Fordyce of Ayton, a more complex double drill machine for sowing turnips has been used for some years, the invention of his steward, Mr Lowrie. That part of it which sows the turnips is upon the common construction,

tion, with cannisters as already mentioned. It has a farther contrivance for sowing pulverised manure, such as rape dust, soot, or coal ashes, along with the seed, from hoppers. It is likewise constructed for watering, at the same time, the narrow slip of soil in which the seeds and powdered manure are deposited, to counteract the evil effects of remarkably dry seasons. It is not necessary to attempt a minute detail of the mechanism of this ingenious machine, as no words could convey a sufficient idea, without the assistance of very accurate drawings.

A considerable number of machines of various constructions are used for sowing grain in drills or rows at regular distances. But as these have not been invented in this county, they do not seem to require any minute description in this report. Mr Bailey at Chillingham, one of the reporters of Northumberland, has the merit of having invented the corn drill most generally approved of in the Merse; and to that report reference is made for more particular information on the subject.

For sowing beans a very simple drill barrow sows one drill at a time; either in open drills afterwards covered, or following the plough, as will be more particularly described under the culture of beans. Some farmers sow grain by a similar single row drill barrow, following a small double-mould-board plough, or fixed between the stilts of a common plough, making a very shallow furrow. But this mode is extremely tedious, and farmers have no time to spare in conducting their seed processes.

SECTION

SECTION V.—HORSE-HOES.

For working the soil between the rows of beans, turnips, and potatoes, which are all from 27 to 30 inches distant, a very simple and efficient horse-hoe is in almost universal use. It consists of a flat triangular share, somewhat like a masons trowel, fixed by a strong upright coulter to a light plough beam; two moveable horizontal arms or wings are connected by hinges to the share, and by upright coulters, to a curved iron attached to the beam, and can be set wider or narrower to suit the circumstances of the crop. The whole is easily drawn by one horse, and cuts over all weeds in its progress, a few inches below the surface. It is a most effective implement, and saves a vast deal of hand labour.

SECTION VI.—SCUFFLERS, &c.

THE scuffler is very little used in this county, as it is found to clog with land-stones, and roots. But in soils which

which work tender, and which are free from much inequality of surface, and from obstructions by stones and roots, it promises to be a most valuable implement for reducing soils to fine tilth; as it is able to go through nearly three times as much work, in the same period of time, as can be accomplished by the plough. Not being an invention of the county, and only recently and sparingly adopted, it seems needless to attempt its description. It has sometimes occurred to the reporter, that a large strong horse-hoe, similar to that mentioned in the foregoing section, but rigid, might answer all the uses of the scuffler, without being subject to the obstructions which collect among the numerous coulters and shares of the latter.

No scarifiers, skims, or broadshares, are used in the county, so far as has come to the knowledge of the reporter. Upon the whole, the tillage of Berwickshire is confined to the simple use of the plough and harrow, though certainly labour might be often greatly abridged, without lessening its good effects, by some of the above-mentioned contrivances; and doubtless the rapidly progressive rise in rents and wages, and in the price of horses, will soon give occasion to the adoption of economical contrivances for abridging work. And in the endeavours of his brethren towards this very desirable end, the reporter ventures earnestly to recommend the trial of implements of the most simple construction, as infinitely better calculated for husbandry, than those of greater complication and apparently more ingenuity.

SECTION VII.—THRASHING MILLS.

VERY few farms in this county, of any importance, are now without the almost indispensible accommodation of a thrashing mill, going by water, wind, or horses. Of late, mention has been made of some driven by the power of steam, but they have not yet reached this county.

These machines are now so very universal, that, in a circle of three miles round the residence of the reporter, there are four going by water, four by wind, and ten that are driven by horses. Wind-mills, which are very rare in Scotland, because streams are every where to be met with, sufficient for the usual purposes of corn mills, are now becoming very numerous for thrashing, because streams can seldom be found that will serve for the purpose; and they are preferred to horse thrashing-mills, especially on large farms, as not interfering with the regular labour. Water is unquestionably the best and most economical power, where it can be had. Of the steam power, for thrashing mills, having no experience whatever, the reporter can give no opinion or account.

Even many small farms have now got small thrashing mills, driven by one or two horses. But hitherto these have not been found to answer nearly so well in proportion, as larger ones, driven by four or six horses.

A considerable velocity is required for clean thrashing, which can hardly be given in these small mills, and they require a great many more hands in proportion to attend them, than is required by the larger ones.

Not being the invention of this county, it does not seem necessary to enter into any minute account of their construction; which besides, would require very detailed description, assisted by numerous drawings, to render intelligible and useful. Several unsuccessful attempts were made, many years ago, to contrive a mechanical means of thrashing; but it seems now fully ascertained, that husbandry owes this most excellently efficient, and highly economical contrivance, to the late Mr Muckle, an ingenious mill-wright in East-Lothian; who likewise introduced, many years ago, from Holland, the vertical mill for making pearl barley. For these services Mr Muckle never recived any public reward; and did not even derive any material remuneration from the profits of his employment.

The history and progress of this invention certainly belongs to east Lothian; yet it may be proper to remark, that the late William Crow, Esq; of Nether-byres in this county, a gentleman already mentioned in Chap. I. Sect. I. constructed a working model of a thrashing mill, many years before the contrivance of Mr Muckle, but upon quite different principles. That by Mr Crow consisted of a series of flails or swiples moved by machinery; which was found tolerably efficient, but dangerous to approach, and very liable to break.

Several other attempts to thrash by machinery were made, in several other districts, both of England and Scotland; but, as in no manner connected with this county, the reporter does not consider it within his province

province to enter upon the subject, which has of late been made, in some measure, a controversial matter.

Thrashing mills are very various in their powers and performances, from 12 or 18 bushels of grain in an hour, to 30 or even 60 bushels. All of them separate the grain from the straw, by means of two cylindrical rakes, which toss the straw in opposite directions, and finally deliver it into the straw barn; while the shaken out grain and chaff fall through grated hoppers, and pass through at least one winnowing machine, which separates the chaff. The chaff is blown out into a small separate apartment, allotted for its reception, and the grain is delivered into a room with a boarded floor. It is afterwards fully dressed up for market in that corn room, by a separate winnowing machine driven by hand, called fanners, and by means of riddles, sieves, and rees, to separate the light grain and small seeds from the good grain.

Small thrashing mills, to be driven by one horse or two, have been made for from L.15 to L.30. But there are generally very imperfect instruments; and, for the most part, wanting the necessary strength in the connection of their parts together, they soon work loose, and become altogether inefficient. A good, strong, and powerful machine, to go with four or six horses, may be constructed for from L.60 to L.80; besides the necessary additions to, and alterations of the barn, and the building for supporting the horse wheel; in all from L.100 to L.150. The building of a tower, the sails of the wind-mill, and the machinery connecting this with the thrashing mill, may occasion an additional expence of from L.150 to L.200. The expen-

ces attending a water thrashing mill, as dependant upon a multiplicity of varying circumstances, cannot be averaged.

Many farmers have a pair of mill-stones connected with the machinery of their thrashing mills, for bruising corn or beans for horses, or for grinding for the uses of their families and servants; but this is considerably hampered by the circumstances of thirlage, already explained. To the thrashing mill, likewise, more especially when driven by wind or water, a straw cutting machine may be very advantageously connected.

SECTION VIII.—WINNOWING MACHINES.

THE reporter uses the freedom to place this machine immediately following the thrashing mill, to which it is so very intimately connected. The winnowing machine is in absolutely universal use, for dressing grain of all kinds; and is said to have been originally derived from Holland or Flanders, or according to some, from the East Indies or from China. In its origin, it was extremely simple, consisting only of a wheel with four sails or fans, of thin board or sheet iron, made to revolve with great rapidity in a close drum or chamber of the machine, so as to occasion a strong wind by a narrow aperture, through which the grain was made to fall gradually. This artificial wind blows the chaff and light grains behind the machine, and the good grain

falls by its superior weight directly through the streams of air. It has been improved considerably, by the adapting of different wire sieves or riddles, shaken by the machinery; and the good grain now falls along a sloping harp or declivity of iron wires with small intervals, for separating small seeds.

After all, the industrious use of the riddle, is still indispensible, for perfect dressing; and the following is a general account of the whole progress of cleaning or dressing grain in the corn room. As it falls from the winnowing machine attached to the thrashing mill, into the corn room, it enters by two apertures; one of which delivers the best grain, and the other the lighter; but from the rapid action of the mill, and the large quantities rushing at once through the stream of air in the attached winnowing machine, the separation is by no means perfect, and many broken straws and some chaff are intermixed with both. One or two women, according to the power of the thrashing mill, are stationed in the corn room to receive the grain, who riddle the two deliveries into separate heaps; all the refuse of the first being thrown to the second, and the refuse of the second being laid into a third heap.

The regular dressing is afterwards performed, when the hurry of thrashing is over; and the steps of this varies according to circumstances. The third heap is often first dressed in the winnowing machine; its best produce is riddled into the second heap. The second heap is next dressed, often twice or three times, riddled each time, and its best produce thrown into the first original heap. This first, or best part of the grain is now dressed by the winnowing machine, once or oftener, as it seems to require, riddling each time, and

when considered enough, is measured up for market or use.

All the out-dressings are now carefully dressed again by themselves, as a kind of second, inferior, or lighter grain; and is either sold separately, reserved for family use, or given to the work horses. The final refuse is used for the poultry or pigs, or given to calves or young cattle, sometimes boiled.

A good winnowing machine, of the best construction, costs about seven guineas. It is driven by hand, and requires at least four persons to drive, feed, and riddle the grain. It might be very conveniently attached to the machinery of the thrashing mill, and driven by that power, which would save one persons wages: Yet in that way its motion could hardly admit of being regulated, according to circumstances, nearly so well as by hand.

SECTION IX.—CHAFF-CUTTERS AND BRUISERS.

NEITHER of these implements are in any thing like general use in this county, except so far as already mentioned in the vii. section of this chapter, respecting mill-stones attached to thrashing machines, for bruising corn and beans. Chaff-cutters, if thought necessary, might be easily added in the same manner. Mr Fordyce of Ayton has a chaff-cutter upon one of the farms in his own possession, but has not hitherto been followed

ed by the farmers; at least, so far as has come to the knowledge of the reporter, there are extremely few of these implements in this county.

No waggons are used in the county, so far as the reporter knows. Neither is any implement known under the name of Tumbril; unless it be the cart to be mentioned in next section, under the provincial denomination of cowp-cart.

SECTION X.—CARTS.

UNDER this section, the reporter has necessarily to mention all the carriages used in husbandry in the county, which are all carts.

The most general cart draught is by two horses; of which there are two kinds, the short and long cart; and of the short cart there two varieties, the common close cart and the *cowp* cart; of which each in order, though neither of them require any minute description.

The common *short* cart is drawn by two horses on end, and is used for a variety of purposes in husbandry, but is often made in the form of what is called a *cowp* cart, probably analogous to what is distinguished in the plan for reprinted reports under the name of tumbril. The body of the cowp cart is attached to the shafts by a peculiar kind of hinges, which allow of elevating it before, either partially or intirely, to facilitate the discharge of its load backwards, either by degrees into small heaps, or at once, without the trouble of un-

yoking the shaft horse. This is now universally employed for carrying out and laying down dung, lime, or compost, upon the fields.

The common cart drawn by two horses, differs only in the body being fixed to the shafts, and is employed for any purposes of heavy draught; but farmers seldom now have both.

The one horse cart, either fixed to the shafts, or made in the *cowp* form, has of late years made considerable progress in this county. Experience shews that, upon our hilly roads, two horses thus employed are capable of doing considerably more work, than when both are employed in one draught. In going up hill, the foremost horse in a two horse cart is of material service to the draught; but when going down hill, the shaft horse has the whole load to support, and is often materially incommoded by the drawing of the trace horse. It is therefore obvious, that two separate loads, which are each easy in one horse carts, must become over-burdensome when united upon a two horse cart. The load upon this latter, found quite sufficient for two ordinary horses in the Berwickshire roads, is from 16 to 18 hundred weight; while two one horse carts, with the same horses, can easily draw 24 hundred weight, 12 in each; and they are always guided by one man. To the west of Edinburgh, upon the level Glasgow road, 23 to 26 hundred weight, is the ordinary load for one horse carts.

The long cart has a much longer body, usually a mere skeleton of open spars, and surmounted by a projecting frame at each side and before, and is in universal use for carrying home corn in the sheaf, from the fields to the rick yard, and for the transport of hay and straw.

It

It is almost always drawn by two horses on end; and, not being in use the whole year, is generally mounted on the same wheels, which are used for the rest of the year to the close carts.

As there are nothing particular in the structure of any of these carts, it does not seem necessary to attempt any minute description, which would be useless without plates.

SECTION XI.—MISCELLANEOUS IMPLEMENTS.

As there are no other implements worth notice, it has not been thought necessary to insert the other sections of this chapter, as contained in the plan for the reprinted reports.

There are neither draining mills nor sluices in the county, excepting merely the sluices belonging to water mills, which are not intended for particular notice in an agricultural report. The rakes, hoes, spades, shovels, and other such implements, are all of the most simple and common construction. Borers are hardly known, and at any rate have not come into any degree of general use. In one or two places, they have been used to search unsuccessfully for coals; and may have been employed to find water to pit wells; but have not hitherto been used for draining, at least to any extent that has reached the knowledge of the reporter.

The

The tools ordinarily used in draining, are only the common spade and shovel, assisted by the mattock. The reporter has for several years satisfactorily used a set of draining tools sent from the west of Scotland, under the name of Essex tools; consisting of three graduated spades, the last only two inches broad at the point, and three corresponding shovels. He has found them very materially useful, as the drains they make require vastly less materials for filling them. But, as they do not belong to the county, and have not been even copied by the neighbours, no farther notice seems necessary in this place.

Sowing troughs are quite unknown. A few weighing machines, expressly for the purpose of weighing cart loads of hay for sale, are to be met with in different parts of the county, but are not general. They consist of a compound wooden still-yard, nearly on a level with the ground, having a very low suspended platform, on which the loaded cart is run back for being weighed. These were first introduced into the county by Alexander Low, Esq; the very ingenious and highly experienced original reporter of Berwickshire. No machine for weighing live cattle and sheep is known to exist in the county; and there are none at toll-bars, as in many parts of England, for ascertaining the loads upon wheel carriages.

It may be worth while to give the following comparative view of the present prices of implements of husbandry in this county, contrasted with their cost fifty

or

sixty years ago; for which the reporter is indebted to a communication from Mr Low.

Implements.	*Prices of* 1808.			*Prices about* 1750.		
	from L.1 15	0 to L.2	2 0	From L.0 15	0 to L.1	2 0
Plough, fully mounted	0 9	0 — 0	10 0	— 0 5	0 — 0	7 0
wood and work only	— 1 0	0 — 1	5 0	— 0 10	0 — 0	12 6
Pair of harrows, fully mounted	— 0 5	0 — 0	6 0	— 0 2	4 — 0	2 6
wood and work only				Few or none.		
Breaks, fully mounted	— 1 14	0 — 2	2 0	—		
wood and work only	— 0 7	6 — 0	10 6			
Rollers, fully mounted	— 3 5	0 — 6	6 0	— 0 10	0 — 1	0 0
Drill plough, with two-mould boards	— 0 12	0 — 1	1 0	—	None.	
Turnip drills, single	— 0 9	0 — 0	15 0	—	None.	
Ditto compound, with roller	— 2 2	0 — 3	3 0	—	None.	
Hoeing plough	— 0 12	0 — 1	1 0	—	None.	
Close cart, fully mounted	— 8 8	0 — 10	10 0	— 3 10	0 — 5	5 0
wood and work only	— 3 3	0 — 3	15 0	— 1 10	0 — 2	0 0
Long cart, fully mounted	— 6 6	0 — 8	8 0	— 3 3	0 — 4	0 0
wood and work only	— 2 10	0 — 3	10 0	— 1 15	0 — 2	0 0
Waggons, fully mounted	— 24 0	0 — 30	0 0	—	None.	
Weighing Machine	— 6 6	0 — 21	0 0	—	None.	

" Fifty

"Fifty or sixty years ago, wains were much more used than carts, as oxen were then much employed as beasts of draught. They differed from carts principally in this, that they had one shaft or pole, which extended forewards between two oxen, and was hooked into a yoke that rested on their necks. They were drawn by two oxen, having two horses in traces before them, and carried great loads. Their cost was from five to six pounds. There are very few people now living who remember sledges and tumbrils in common use; though these are not yet intirely banished from the highland parts of the county."—A. L.

To this it may be added, that waggons, though enumerated in the foregoing list of prices, are now entirely laid aside by our farmers, and are only used by two or three carriers belonging to the English side of the Tweed. In the first ardour of improvements by liming, they were much used in this county and in Roxburghshire; but single horse carts are now getting into repute, and, so far as is known to the reporter, there is not at present a single waggon in the county. Indeed, on the best authority, he is enabled to assert, that scarcely one individual in the county ever replaced a worn out waggon: A full proof that the opinion of the farmers was decidedly against their use, in the roads of this part of the kingdom.

CHAPTER

CHAPTER VI.

INCLOSING.

SECTION I.—CASES.

It has been already mentioned, Ch. 2d, Sect. 2d, § 3d, that a general inclosure act was passed by the Scots parliament in 1695; and that almost the whole lands of the county are now under absolute severalty, excepting one or two common moors, or wild mountain pastures, that may still remain common to the tenants on the surrounding properties. The cases of division there mentioned, as having taken place between the years 1750 and 1760, are so long ago, that none of the particulars enumerated in the plan can now be recovered.

Coldingham moor, a common containing about 6000 acres, was divided among those having interest about the year 1777, after many years litigation before the Court of Session, the supreme Court of Scots civil judicature. But the reporter has not been able to procure the necessary information upon the legal steps of the process which it occasioned; and to procure them from

from the records of the Court would be attended with enormous expence without any proportional advantage.

This division took place soon after the commencement of spirited improvements by liming, and most of the proprietors expected to have derived great emolument from the division. Lime was then thought the grand agricultural panacea, and capable of rendering any soil whatever good and fertile. But, in the result, the proprietors were most miserably disappointed. The surface of Coldingham moor, generally speaking, hardly can be called soil, it is so very weak, thin, and barren; and the substratum is of the very worst kind of till or moor band. Some few parts, however, have turned out better than the general run, and, what is singular, these had least done to them at the time. At all events, keeping out of view the absolutely wasteful attempts at improvement, the whole is certainly of vastly more value in severalty than it ever could have been as a common. Had the expence thrown away, in abortive attempts to improve that waste into good corn and grass land, been judiciously employed in fencing and planting the whole, it would by this time have amply repaid thrice the value of its fee simple, and all charges with compound interest; and in 30 years more would have carried a value of timber fit to purchase an equal extent of the most fertile soil in the Merse.

It has been suggested, from a most respectable quarter, that the most likely means of improving Coldingham moor would be, to convey, from the bottoms, a part of that rich earth with which they seem to abound, and to improve the upper ground with the soil thus got, mixing it with lime and a portion of dung, if it could be obtained. But to this plan several material objections

tions occur. Any of these bottoms, containing rich soil, would be, perhaps, more profitably occupied for improvement in their original state; and were that rich soil so abundant as to be spared for improving the bad moor, the bottom or subsoil is so coarse and wet that it would require ruinous expence to lay it dry, without which indispensible previous operation, all kinds of manure would be utterly thrown away. Reducing the whole to high crowned narrow ridges, or lands, and planting the whole with forest trees, seems the only improvement eligible for this high, waste, bad, moor.

Lauder common has been already mentioned as under a kind of improving husbandry, without legal division, by an amicable temporary arrangement among those having interest.

Chirnside common, containing 2462 acres, has been recently divided among those having interest, by commissioners nominated according to the provisions of the general inclosure act, already mentioned. Being the only case which has occurred in this county during many years, a succinct narrative of the steps of procedure may be here given.

1. In the first place a proprietor of lands claiming right of common pasture over Chirnside common, brought a *process of division* against all the other proprietors of lands who had, or were supposed to have, interest in the common.

2. No opposition being made, an interlocutory judgement was pronounced by the Lord Ordinary, granting commission to two gentlemen conversant in business and in the value of lands in Berwickshire, and having no interest in the matter, to take a proof of the extent and limits of the common, as so reputed, possessed, and enjoyed

enjoyed for 40 years preceding, or past memory—to describe and fix the marches or boundaries by pitting and march-stones—to investigate the rights of the several parties claiming shares, with the valued rents of the lands in respect of which they claimed—to divide the common according to the several rights, on due consideration of quality and quantity, and to mark out the several allotments, as nearly as might be, adjacent to the original separate property of each—to appoint a land surveyor to measure and map the common, and the several divisions into which it was to be allotted—to execute the commission upon the ground itself, or at any other adjacent place—and finally to report the whole to the Court.

3. Accordingly the commissioners proceeded to the ground, attended by a number of witnesses, who had been long conversant in the extent and boundaries of the common; and having perambulated it, with the advice and assistance of these witnesses, who were all examined upon oath; and having compared this proof with a perambulation and map which had been made 40 years before, they fixed the marches and boundaries, directing their sworn surveyor to make a survey and plan, distinguishing separately upon it the contents of all the several plots or areas that appeared to be of different qualities and values.

4. In the next place, proof respecting the possessions and customary occupations, of the various properties for which claims upon the common were made, was taken *seriatim* by the commissioners, by the examination of a multitude of witnesses; and the rights of the claimants were respectively decided upon, with the amount of the valued rent of the property of each allowed claimant, for those

those parts of their properties to which rights or usages upon the common had been substantiated.

5. The commissioners then ascertained the value of each plot in the plan and survey, by inspection, assisted by several respectable farmers having no interest, and in so doing estimated some of these plots or areas so low as 6d. an acre rent, and others so high as 12s. with numerous intermediate valuations, estimating the rental value of the whole 2462 acres at L.263. 8s. 11d. yearly, in its then state, or 2s. and a penny farthing the acre of average rent.

6. The next step was dividing the whole among those having right, in proportion to the valued rents of their respective properties upon which they had established their several claims, quantity and quality of the several shares always considered. All which allotments were marked out by distinguishing pits and march stones, and accurately delineated and distinguished upon a map or plan of the whole.

Lastly. The whole proceedings of the commissioners, with the various documents, plans, and proofs, and their final interlocutory judgement upon the whole matters committed to their charge, were reported to the Court of Session, the supreme court of civil judicature in Scotland, to be there confirmed; and, there being no opposition, were confirmed accordingly, and are placed on record, as a lasting memorial of the whole transaction.

According to the best information which could be procured, the whole expence attending this division amounted to about L. 1000; which was levied upon the several persons to whom shares of the common were allotted, in exact proportion to the valuation of their respective shares. It is to be noticed that the act of Par-

liament gives no authority to the commissioners to inclose the whole common, or the several allotments; and accordingly inclosure forms no part of the procedure in the division of commons in Scotland. But every proprietor of land may inclose his own property; and if a conterminous proprietor should afterwards avail himself of a boundary fence, in the subsequent inclosure of his own grounds, he is bound to reimburse the other proprietor for one half of the expence of that boundary fence.*

SECTION II.—FENCES.

1. *Sorts.*

THE lands of the county are almost universally inclosed and subdivided into regular fields, though some properties, or parts of properties, still remain open, or are now in the act of inclosure. The arable slopes of the

* Where the boundaries between any conterminous properties happen to be so crooked or inconvenient as to prevent inclosures from being made, on the application of either proprietor to the Sheriff of the county, such an exchange is made, upon fair terms, as may render inclosure easily practicable. In all cases a proprietor can oblige the owner of an adjoining estate to pay half the expence of an ordinary fence, on the boundary between the estates, on giving previous notice of his intention to inclose.

the southern hills of Lammermoor are still mostly uninclosed. But as almost the whole county is in a state of absolute severalty, these terms of inclosed and uninclosed refer merely to the presence or absence of fences.

In the hill district of Lammermoor and Lauderdale the breeding sheep farms, though in absolute severalty, are neither inclosed nor subdivided, and their boundaries are only indicated by land marks. Many years ago, probably at the period formerly mentioned, when divisions of common lands were effected, several attempts were made to inclose or fence some spots in these hills, and to form march dykes, or boundary fences. But either from these having been very imperfectly executed, or from utter subsequent neglect, they have now all become entirely useless.

For these farms, which are almost universally stocked with an active wild breed of sheep, the raggled wall of dry stones, usually called the Galloway dyke, is peculiarly well adapted, as no animal will attempt to leap over; but as originating in a different and distant county, and hitherto very little known in this, it does not claim any farther attention here.

In the hill district boundary fences between separate farms, and subdivision into very large pastures, provincially termed *flock rakes*, adapted to the several descriptions of stock kept upon each farm, are chiefly wanted, together with the effectually fencing and subdividing so much of the farm as is susceptible of cultivation, usually a small proportion.

The great evil of a stone wall is its continual deterioration, but no other fence is at all eligible in such situations. The ordinary dry stone dyke of 4½ feet high,

with a turf coping, may be constructed for about 4s. the rood of six yards, besides quarrying and carriage of materials. When finished off by a raggled stone coping, cemented by a little lime, the cost may be about half a crown additional. The whole charge, including quarrying the stones and purchase of lime, may cost half a guinea the rood, and the inclosure of an extensive sheep farm by a ring fence, and its division into sheep rakes, might probably be effectuated at an expence of about 50s. an acre. If the neighbouring farms are inclosed at the same time, this expence will be very materially lessened, as half only of the boundary fences falls upon each farm, and the repairs of these must be at mutual expence. Not being conversant in the nature and economy of these farms, the advantages of inclosure cannot be here appreciated; but from having observed very extensive inclosures of apparently barren hill pastures, in Cumberland, Westmoreland, and Lancashire, by lofty dry stone dykes, it is presumed the expence would be very amply repaid on the Berwickshire hills, by the consequent great conveniency and shelter.

In the low country the almost universal inclosure is by quickset hedges of white thorn, though some stone dykes are to be met with over the whole county. Hedges are either single or double.

In constructing a single hedge the thorns are universally planted on one side of a bank or mound of earth. One side of the row of young thorns is guarded by the ditch from which the mound was formed. The other is protected by the mound itself, having a rail fence, or a dead hedge of cut thorns, upon its ridge. Sometimes the mound side is guarded by what is called a faced dyke, either built entirely of stones or of alternate layers

layers of stone and sod. Either of these forms an immediate fence on that side, which will last, with proper attention, until the young thorns on the other side become fencible. On strong clay soils, the faced dyke is often made of sod, without stones. The single hedge, with mound and ditch, may be formed at from 1s. to 1s. 6d. the rood of six yards, according to the breadth and depth of the ditch, usually five feet broad by three deep, and one foot broad at the bottom. The faced dyke, of 4½ feet high, may cost 2s. 3d. a rood, exclusive of materials laid down. To prevent sheep and cattle from getting upon the mound from the side on which the hedge is planted, a dead hedge of cut old thorns is often set in, just behind the row of young thorns, and this may cost 3d. or 4d. Thus the whole fence may amount, in its first cost, to somewhat below 4s. a rood, or from 7d. to 8d. the running yard.

For march fences between farms, or for separating properties, a double hedge is often used. In this case two ditches are drawn at nine feet asunder. The soil from both ditches is thrown inwards, and a thorn hedge is planted on both faces of the intervening mound. The cost of this may amount to about 3s. for each rood.

In new inclosures, where the property affords no old hedge wood, for forming dead hedges to protect the young thorns while growing, paling is very commonly placed on the top of the mound. When this is made of country fir, of three rails, the workman finding materials and nails, it may cost about 3s. a rood, and if of foreign timber about 6s.

In march fences, formed of double hedges, the middle of the intervening mound is the mutual boundary;

when by single hedges the line of thorns is the march, the ditch being thrown up from the property on one side, while the mound is laid upon the other.

Very commonly hedge row trees are planted, either in the rows along with the thorns, or on the bank behind them; but it often happens that these are ruined in their early growth, by being cropped over or browsed by cattle and horses. It is of importance to use proper kinds of forest trees for this purpose, as some, especially Scots elms, are very apt to throw out suckers that usurp the places of the young thorns, and form incurable gaps, or weak places, in the hedge. Some writers on rural affairs condemn the use of hedge rows in agricultural districts, because injurious to the growing corns, and especially hurtful in harvest by preventing the free circulation of air; and recommend instead the planting of clumps and belts in judiciously chosen situations, for ornament and shelter. The reporter having no experience of land that is much intersected by hedge row trees of long standing, is unable to give any decided opinion on this subject. Yet it is perfectly obvious to every person who has compared different parts of Britain, that hedge rows give a rich and sheltered appearance to a country, while the want of that ornament occasions many fertile and highly cultivated districts to appear neglected, cold, and desolate.

" In many of the first made quickset hedges in this county, where there are hedge row trees, the thorns are growing as close to the roots and stems of the trees as can be wished; and there are some instances of trees twelve feet in circumference growing in the line of such hedges. This size not only marks that trees will grow well in hedge-rows, but likewise shews the antiquity

tiquity of quickset hedges in the county. When planted in hedge-rows, the trees ought to be set along with, and as low in the bank as, the thorns, and not on the top of the earth bank, as is too commonly the case; because, on the top of the bank, their roots are placed in the very worst soil, and are exposed to great injury from drought." A. L.

In some rare instances the hedge side of the mound is faced up with dry stones to the shelf or scarcement, on which the thorns are laid, and which just project beyond the surface of the wall; the faced dyke is then carried up fence height, leaving small holes for each thorn plant to grow through; and the mound is completed behind the dyke by throwing up earth from the ditch, which in this case is made shallower than usual. Besides that this dyke is a fence from the beginning, thorns planted in this manner require no weeding, and very little after care of any kind, except switching up the face of the hedge occasionally. For a few years at first the young thorns may be effectually guarded from sheep and cattle on their own side, by filling the ditch with cut old thorns. The other side must be guarded by a rail or dead hedge, as formerly mentioned. This compound dyke and hedge is an admirable fence for young plantations, and along road sides.

To rear a thorn hedge, so as to become a good and permanent fence, requires continued care for a number of years. It must be protected while growing, that neither the young thorns be destroyed, nor the mound broken down, by cattle, sheep, or horses. For this purpose various expedients are resorted to according to situation and circumstances. A rail, or a dead fence of cut old thorns, is generally placed upon the top of the

mound or hedge bank, and sometimes another temporary fence of either of these kinds is made on the outer lip of the ditch. Sometimes a row of whin seed, furze, or gorse, is sown along the top of the mound; this grows and becomes in a few years, with proper care, an excellent guard and shelter to the young thorns. Great care ought to be taken to prune or switch the whin hedge regularly, to prevent it from running to seed, which would scatter and grow among the thorns, and greatly obstruct their growth. It is likewise absolutely necessary to attend carefully to the young thorns in their growing progress. For this purpose they must be regularly kept free from weeds, twice every year at first, till they have acquired some strength, after which once a year may suffice. This weeding process may be executed for about 6d. to 1s. each hundred yards; and it would be advantageous to dig over two spade breadths behind the thorns every year for a few years, which would greatly encourage their growth. The face of the young hedge may be switched or dressed up yearly by a sharp hedge knife. In consequence of repeated weedings, a considerable portion of the best soil is necessarily removed from the roots of the thorns, leaving them bare, and filling up the ditch. To remedy both, it becomes necessary to replace that earth, and to scour out the ditch. The operation for these purposes is termed *tabling* the hedge. After a thorough weeding, and forming a shelf below the thorn roots, one or two courses of sods are laid upon the shelf, and completely in front of the elbow of the thorns, where the upright stem and horizontal root unite; and the cleanest of the earth from the ditch is filled in behind and upon the sods, among and over the thorn roots. This operation may

may be executed for 3d. to 4d. a rood, according as one or two courses of sod may be required.

After the thorns have acquired considerable strength, it is customary to cut the hedge into regular form. While the fields they surround are under the plough, some people cut them over, either close to the ground, or at three feet high. By either of these a quantity of stuff is acquired for making temporary dead fences. Others cut the full grown thorns at fence height, and dress up both sides close to the stems, continuing to switch or breast them up yearly in the form of a sharp wedge.

In switching or pruning a grown hedge, the branches next the ground should be shortened within two feet of the stem. Those above ought to be made shorter and shorter in proportion to their distance from the ground, and, at five feet high, cut off close to the stem, which is then cut off. By this method of dressing, the hedge gets the appearance of a steep roof, or of the hogged mane of a horse. Every twig receives its full share of rain, sun, and air, and the lower branches are not destroyed by the dropping of water from those above them. The slope of the sides being even, the hedger, in the after prunings or switchings, in a manner mowes them with his hedging bill, and makes more dispatch than where both sides and the top are rounded off, which latter shape obliges him to nibble his work as it were, making many different cuts on each side between the root of the hedge and the top. When the hedge is at its proper height of five or six feet, the top must be cut over evenly and uniformly. This is the mode in which the hedges belonging to Mr Fordyce of Ayton are managed, and it certainly is an excellent plan.

plan. For those, however, who still have young hedges to train, without the conveniency of weedings from young plantations for the formation of rails, this plan of management does not suit, because preventing a supply of sufficiently strong cuttings for dead hedges. In the estimation of some persons it is likewise objected, that hedges managed in this manner have too much uniformity of appearance, and deprive the country of what is called picturesque beauty.

A thorn hedge, properly trained and occasionally cut over, or dressed in the wedge shape, will last for ages, perhaps for ever. But, as inclosing is only of comparatively modern introduction into Berwickshire, there are not sufficient data to pronounce upon the duration of thorn hedges. In all situations where they have been well trained, the oldest remain fresh and vigorous. In other places where they had been allowed to grow up, wild and unpruned, like forest trees, the stronger plants have suffocated the weaker, and, when cut over, the hedge has been found full of wide gaps, and many of these old cut thorns have died out.

One gentleman, lately deceased, having allowed his hedges to grow up irregularly, and only weeded and protected from trespass, to considerable size, caused the greater part of the thorns to be cut over close by the ground, leaving a long stem dressed bare of branches, at every two or three feet distance; a number of stakes were then driven into the ground, about four and a half feet long above the surface, and immediately within the line of thorns; the long stems were next cut almost through, close to the ground, and obliquely interwoven or plashed among the stakes; and the fence was completed by a wattled coping of twisted edders. In the first

first part of this process the hedge seemed condemned to absolute destruction; when completed it had the appearance of a very thin, weak, and imperfect stake and edder dead fence. But after a few years, every thorn continually throwing out new growth, and the whole being regularly dressed up on both sides by the hedge knife, a hedge thus managed becomes a living wall, impenetrable by every species of farm stock.

In some instances the following plan has been successfully executed. All the thorns of a half grown hedge are cut nearly through, a very little above the earth, on the side next the ditch. They are then successively pushed obliquely backwards against the hedge bank, which is dug over progressively, so as to cover or bury the points of the cut thorns. Being still attached to the stems and roots, these all live and grow, and the buried points strike roots, while the short stubs, in the original line of the hedge, throw out new growths. The front is afterwards dressed obliquely backwards; and after a few years, more especially if the hedge is double, and treated in the same manner on both sides, such a hedge becomes absolutely impassible for man or beast.

Gaps in hedges may often be successfully cured by laying down a branch, or a thorn half cut over, from each side of the gap, fixing these firmly in their places by natched sticks driven into the ground, and covering their ends with earth, to make them strike root. The horizontal layers push up perpendicular branches, and fill the gap. This operation must be carefully guarded by rails or dead fence, till it acquires sufficient strength for its own support. In cutting a thorn half through, for the various purposes before mentioned, it

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is of great importance that the cut be made obliquely upwards, and perfectly clean, by an adroit stroke of the hedge bill, as when cut downwards, or any way split and haggled, the short remaining stub admits rain, and is sure to rot or die out, leaving a bad gap in the hedge.

2. *Gates.*

There is nothing very particular or worth recording in regard to the gates and gate posts of this county. Some proprietors and farmers have adopted an excellent practice for gate posts by transplanting living trees of some age. Where these take root and thrive they become permanent, and improve in strength yearly. It is necessary, however, so to regulate their growth as to prevent their boughs from obstructing the passage of carts when loaded with hay or corn sheaves. Though it has not been thought necessary to form any particular investigation of the construction of fields gates, yet the following very judicious general observations, from a highly respectable proprietor of great experience in rural matters, which have been obligingly communicated to the reporter, certainly merit insertion:

"It is obvious that great care should be taken in the form and construction of field gates, that each bar may have the effect of binding the gate together, and adding strength to the whole; besides which the chief strength of the rails, and their consequent weight, ought to be thrown next to the hinge-end of the gate, keeping these much lighter towards the lock or latch-end. This greatly prevents the gates from *swagging*, or hanging downwards, and dragging on the ground, by which they

they become difficult to open and shut, and are soon strained and destroyed." These circumstances are very particularly attended to in all the new gates on the demesne lands at Ayton, but have not received that general attention in the county which the simplicity and excellence of the principles of construction deserve.

SECTION III.—NEW FARMS.

In a previous section of this report the general inclosure law of Scotland has been noticed, and the beneficial effects specified. From that circumstance, the whole county has been regularly distributed into farms many years ago, and no notices can be given of the establishment of new farms. On the contrary, various instances have occurred of late of two or more farms being conjoined into one, but no circumstances worth mentioning have taken place upon these occasions. These junctions of small farms were vastly more common many years ago, insomuch that, upon most of the present arable farms of any extent, vestiges of ancient small farms steads are still to be perceived, which are generally indicated by a few ash trees growing where their gardens formerly were. At the period of general division and inclosure of Berwickshire, already mentioned to have taken place between 1750 and 1760, a complete revolution was effected in the distribution of farm

farm land and farming population. The lands were all laid off into regular farms, and the population removed from farm towns to separate farm steads, central to every farm. This alteration took place so many years ago that no distinct notices can now be collected as to its effects upon rents and population. But from the best general information which can now be procured, it is believed that the diminution of population was merely apparent, and not real; the farm town, in which all the farmers and all their servants lived, lost population considerably, and became a *deserted* village; but the same identical population was transferred to the individual farm steadings, so that none was actually lost. Since that time the villages have recovered population, by the increased demand for labourers in the improved husbandry, and the necessity of additional trades people, of various descriptions, to administer to the wants of the opulent tenantry.

CHAPTER

CHAPTER VII.

ARABLE LAND.

SECTION I.—TILLAGE.

For an agricultural survey of this county the division into arable and grass lands does not exactly suit, as the farms in general, throughout the whole arable district, are cultivated on the alternate system of successive tillage and artificial grasses, every field coming in its turn, regularly and repeatedly into both, in quick succession. The small farms and village possessions are not regularly thrown into pasture, yet, even on these, a proportion of the arable land is always under a crop of mixed ray grass and clover, for soiling or hay, or both. There is nothing very particular in the Berwickshire tillage, besides

besides what has been mentioned already, in noticing the implements of husbandry, or that must necessarily occur in the sequel, in giving an account of fallow, and of the different crops commonly cultivated, and the preparation of the soil for each: Consequently it will be necessary to be very short in the subdivisions of this section, as directed in the plan of the reprinted reports, because every thing relating to these particulars will fall to be more attentively considered hereafter.

1. Ploughing is almost uniformly performed by two horses abreast, directed with long reins by the ploughman, and a driver is not to be seen within the bounds of the county.

2. Harrowing is executed nearly in the same manner; one man either leads, or drives with long reins, two or three horses, each dragging a harrow. The quantity of harrowing varies according to circumstances, and is denominated single time, double time, or double double times, according as the ground is gone over once, twice, or four times, and is end-long, or across the ridges, or lands, according to circumstances.

3. Rolling is generally performed across the ridges, as more adapted to ensure its benefit to the furrows; and is principally employed for reducing turnip soil to fine tilth, and for finishing off land that has been sown with grass seeds, to facilitate the future operations of the scythe.

4. Scarifying is unknown in this county.

5. Generally speaking, the whole arable land of the county is formed into ridges, either flat or gathered. In clay soil, or land any way subject to wet, the ridges are double gathered and of 15 feet broad. On dry turnip soils, either upon laying down to grass, or when

ploughed from lay for oats, the ridges are commonly 30 feet broad, called *band-win* ridges, and quite flat. Universally all ridges are made in perfect straight lines: Such as are only intended to be temporary, as in the various steps of the fallow process, to be afterwards enumerated, are formed by guess, with tolerable exactness; in breaking up lay, the lines of the old furrows serve as directions for drawing the new ridges, very often converting the furrows of the old into the crowns of the new. In lining off the final ridges of fallow land, a system of exactness is used which shall be mentioned in the 11th subdivision of this section.

"In former times the lands or ridges were broad, high, and crooked, in the form of reversed long Italian *fff*. As improvement by fallowing, marling, and liming, advanced, it became the practice to reduce those high ridges, by frequent cleavings in ploughing; and, when sufficiently levelled, they were straighted. On the out-field lands of a dry nature this operation produced no bad effect; but the case was otherwise with regard to stiff in-field lands, and therefore experience taught the farmers to be cautious in reducing and straighting ridges. This accounts for much of the old in-field land having been long left under the old form of high crooked ridges. In many places where these had been reduced and straighted, even with some care, the direction of the old ridges could long be traced by the eye, at the distance of a mile from the field, and that at all seasons of the year, owing to the good soil on the tops of the old ridges having been gradually thrown by the plough into the old furrows, and the bad unmanured subsoil of the old crowns being brought up to the surface."—A. L.

By persevering good management, however, this evil has now been almost intirely done away, and the soil reduced to uniform goodness.

6. No instance has occurred to the reporter of any crops put in without ploughing in the county.

7. Various crops are drilled; but which will be particularly attended to when treating of these crops themselves.

8. Horse-hoeing is practised only in turnip, potatoe, and bean crops; and will be particularly noticed under these.

9. The same observation may serve here, with regard to hand-hoeing, which will be mentioned under the particular crops to which it is usually applied.

10. With regard to *weeding*, it may be generally mentioned that it is but slightly executed in any respect; hardly any weeds being attended to but thistles, and even these very imperfectly. But, as in the two former subdivisions, the particulars of this will fall to be noticed under these crops to which it is applied.

11. The expression of *striking* furrows, which the reporter supposes to signify the device or contrivance for setting out the direction and breadth of ridges or lands, is termed, in the Berwickshire farming dialect, *fearing*. In this operation, supposing a field is to be divided into gathered ridges or lands of fifteen feet broad, and that any particular fence or side of the field is straight lined, and in the direction which is considered most favourable; the steward or head ploughman, having three or more pointed rods of $7\frac{1}{2}$ feet long, measures of from the fence, ditch, hedge, or dyke, that distance as the middle of the future first ridge, and sets up all his rods in one continued line. He

next

next enters his plough, as exactly as he possibly can, in the line formed by these rods, and guides his horses along the line with the utmost possible precision. Every rod which he ploughs down in his progress, having first stopped his horses, he uses to measure off fifteen feet from the line or furrow he is now forming, or striking. He returns to his horses, and continues his line or furrow, to the end or other side of the field; and all his rods are now set up again in a new line, exactly fifteen feet, or two lengths of the rod, distant from the one he has just drawn. But, to correct any deviations from the exact straight line, he turns his plough back upon the line he has already formed, drawing a second furrow, overlaping the first, and making proper allowances for any little swerving that may have occurred in his first attempt. He then goes to the second line of rods, and repeats the same double operation over the whole field: Or if, from peculiar circumstances in the nature of the soil, and form of the surface, it is adviseable that the direction of the furrows shall change; he either shifts to another fence line as his first outset; or sets up his rods in a straight line by the eye, at the peculiar part of the field where experience or judgment points out that the alteration ought to be made. The other ploughmen of the farm fall into his *fearings*, or striken furrows, and proceed to plough out the field; and, when he has lined out the whole, he falls into the general work. Finally, the head ridges, or head lands, at both ends of the field, are lined out and finished in the same manner.

SECTION II.—FALLOWING.

On all clay soils in this county, a complete over years naked fallow forms the universally believed indispensible basis of all good husbandry; to clean the soil from weeds of all kinds; to refresh and invigorate its fertility, by exposure of new surfaces to the influences of winters frosts, and to the sun and air; to reduce it into fine tilth, for the proper reception and due mixture of manure, whether muck, compost, lime, marle, or seaweed; and to enable it to receive and nourish the seeds of wheat or other grain, and of artificial grasses, which are, almost universally, sown with or among the first grain crop that succeeds a summer fallow.

In this report, the freedom has been used to adopt the provincial term *muck*, to denote farm yard manure in a rotting state, or in fit preparation for use; as it is believed there is no single word in the English language directly correspondent with the idea. Manure is too general, as expressing almost every addition that may be made to soil, for the purpose of amelioration or fertilization; dung is too much restricted, as properly implying only excrementitious matters. The word adopted extends at least over all Yorkshire, and cannot, therefore, be considered as a violent insertion of a Scots term.

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In the management of fallow, our farmers are most laudibly industrious and expert, though all are not equally so: The following account, accordingly, has been drawn up from the practise of the best managers. Invariably after harvest, the land intended for fallow gets an end-long ploughing, which ought to be as deep as the soil will admit. By this the former gathered ridges are usually split open, dividing each old ridge into two; though sometimes the furrow of the old ridge is made the crown of the new one. The former is the more effectual and safer, where the land is subject to retain wet. All the interfurrows, and those of the headlands, are carefully opened up by the plough, and are all gone over afterwards by a labourer with a spade, to remove all obstructions, and to open up the water furrows into the fence ditches, that all moisture may have a ready exit. Wherever necessary, cross or oblique furrows are drawn, and carefully opened up by the spade, at all their intersections; every possible attention being exerted that water may not stagnate in any part of the field. Upon the accuracy of these operations, the efficacy of the succeeding fallow very materially depends; as stiff clay land, which has been drowned with wetness during winter, can hardly ever be brought into good tilth by the after operations of the fallow process; whereas the most stubborn clay, properly laid off by the winter ploughing, and secured from wetness by judicious water furrowing, works afterwards almost as kindly as free loamy soil.

In the foregoing state, the fallow land remains all winter, to rot the stubble, and to receive the influences of the weather, by which the soil acquires considerable tenderness, to the great facilitation of the subsequent

work. As early in spring as weather admits, the fallow land is again ploughed end-long, gathering back the ridges into their original form, or at least reversing the plits of the former ploughing. This gathering is only necessary upon land that is much disposed to retain moisture. In land of moderately good bottom, all the successive ploughings of the fallow process, except the first and second already mentioned, may be made to cross each other.

The fallow land now remains till all the spring seed work of the farm is over, and until turnips, if any on the farm, are sown; unless it should become very much covered by weeds, when it must, as soon as possible, get the third ploughing to destroy these.

The third ploughing, if the second has been a gathering one, must be end-long, spliting or cleaving the gathered ridges, to lay the land tolerably level; but if level before, the third ploughing may be across, in broad lands or *fearings*. After this ploughing, the whole must be well harrowed, with the common harrows; or, if very stubborn, with heavy break harrows.

The fallow gets afterwards as many ploughings and harrowings, as may suffice to reduce it into fine tilth, and completely to eradicate all root weeds. These ploughings ought alternately to cross each other. If necessary, the heavy roller is applied, to bruize the clods, that the harrows may be enabled to tear out the roots of weeds; and these are gathered into heaps by hand, and either burnt or removed. In these successive operations, repeated crops of annual weeds are brought into vegetation and destroyed. The harrowings are given partly across the ridges, and partly end-long, and are more or less numerous, according to circumstances; never less than a full double *time* between each

each successive ploughing. The completest harrowing is called a double double time; in which the harrow goes four times successively over the same range; either all end-long, or all across, or half each way.

When effectually reduced to tilth, and cleaned thoroughly from root weeds, the fallow is again ploughed end-long, into gathered ridges or lands, usually of fifteen or eighteen feet broad, which are set out in the manner already described in Ch. vii. sect. i. § 2. But if the seed is to be drilled, the lands are made of such widths, as may suit the construction of the particular drill machine that is to be employed; and these are set off in the same way, by means of poles of appropriate lengths for the purpose.

After the first gathering, the manure, whether muck, lime, marle, or compost, is laid on, and regularly spread over the ridges. A second gathering is now given by the plough, but with rather a shallow furrow; the seed is immediately sown; the whole thoroughly harrowed; and all the interfurrows, furrows of the head lands, and oblique furrows, carefully opened up by the plough and spade, as already mentioned respecting the first winter ploughing. Sometimes the furrow given immediately before laying on the muck is perfectly flat, only laying the ridges to their proper breadth; the muck is covered by a first gathering furrow; a harrowing follows; and the seed furrow, a gathering one, succeeds.

In the opinion of some farmers, fallow land, intended to be sown with wheat, ought not to be what they call too much reduced in its tilth; as they allege that the clods, mouldering down in spring, assist to nourish and earth up the young plants, and prevent them from being thrown out by frost. But under good manage-

ment, there can hardly fail to be a sufficiency of clods or lumps to serve these purposes; and assuredly the soil can never be freed from the roots of vivacious weeds, except by the industrious use of the plough, harrow, and roller, in the way described.

For the eradication of weeds from strong soils, fallow at proper intervals, and efficiently conducted, is indissibly necessary; and, in the alternate system of pasturage and aration, ought always to intervene once, between breaking up from pasture, and laying down again to grass. In the practice of our best managers, fallow always precedes the grain crop along with which the grsas seeds are to be sown. Long experience has proved, that land ought to be both clean and rich when laid down to grass; by which means the subsequent pasture is abundant and profitable; and when again taken up in its turn for aration, land so laid down is always found to be in high vigour for producing rich crops of grain. As well may a farmer expect a full return of beef, mutton, wool, and lamb, from his pastures, if continually trespassed upon and eaten up by the stock of his neighbours, as that his arable land shall grow full crops of grain, when encumbered, and exhausted of its vegetative powers, by superabundance of weeds.

In the barn of a farm, where such fallow as has been now described was unknown, the reporter once saw a quantity of unthrashed produce, which bafled him to guess what crop it was intended to represent. It had been meant for a broad-cast crop of beans; but *wild* oats had sprung up so luxuriantly, as to induce the farmer to preserve them, and to cut both together, to feed his horses. On another occassion, on two contiguous fields,

fields, one had been intended for clover and ray grass hay, but had greatly more the appearance of a wretchedly foul crop of bad oats; the other was actually meant for oats, but was so full of tall bulbous rooted oat-grass, as to have much the look of a foul hay field. From such a ruinous state, nothing whatever, except a most industriously conducted fallow, can possibly reclaim land, which has been thus allowed to run wild by scandalous neglect.

If land has been judiciously and industriously managed, in the manner described, it may carry repeated alternate crops of grain and pulse, without any intervening naked fallow; more especially if these crops are drilled, and diligently cleaned by horse and hand hoeing. When such land is again fallowed, previously to being laid down to pasture, it will require considerably fewer of the ploughings and harrowings of the fallow process, than has been insisted upon here. But such extended aration as is here supposed, will require that considerably more manure may be given to the land, than can be supplied from its own funds; which is not the case in this county, excepting near towns, or when having a full command of sea weed.

The operations of the fallow process, here described, are numerous, and consequently expensive; in all, not less than six, perhaps sometimes eight or nine ploughings, and three, four, or more complete harrowings. If performed by hired labour, these would cost from two to three pounds an acre, besides one years rent and taxes, merely as a preparation for a crop of wheat. But when the superiority of that crop is considered, as produced by an effectual fallow, in preference to a slovenly one, and more especially the greatly superior

perior goodness of the subsequent pasture, and the richness of the land when again broken up for tillage, there can be no doubt whatever of the propriety and economy of giving strong land a complete fallow once in every rotation. It may be safely predicated, of every farmer on strong soil, that his affluence and prosperity will always be in direct proportion to the extent and excellence of his fallow break, every thing else being well conducted.

Such soils as are capable of growing turnips to advantage, are never subjected to naked fallow in this county. On these, fallow is not only quite unnecessary, but would be absurd and injurious. They can be equally well cultivated, in every respect, by the fallow process connected with the turnip crop, to be afterwards described, and they acquire a great deal of additional manure, and consequently fertility, by its means.

In the neighbourhood of towns and large villages, where manure can be procured, and where alone the growth of potatoes is adviseable to any extent, soils of considerable consistency, and unfit for turnips, are very often planted with potatoes, instead of naked fallow: Yet, even in these circumstances, a naked fallow will be required occasionally; as, though the culture for potatoes is excellently calculated to extirpate annual weeds, it does not admit of any perfect eradication of vivacious roots from the soil. The cultivation of potatoes will be considered hereafter.

SECTION

SECTION III.—COURSE OF CROPS.

1. *General Remarks.*

As the system of husbandry universally followed in this county consists, as already repeatedly inculcated, of an alternation of pasturage and aration on the same lands, no absolutely fixed course of cropping can be said to prevail. Upon all the large farms, where live stock, black cattle and sheep, form a most material object, about half of the arable land in each farm is kept in grass for pasture; and no fixed age prevails, at which there pastures are broken up. This depends upon a variety of circumstances; the goodness of the pasture, or its falling off, sooner or later; the profitableness of stock or the contrary; and the proportional profit to be derived or expected from the cultivation of grain. Frequently the proportion of land to be kept in grass upon the farm is fixed by the lease; more rarely during its whole endurance; but very generally for a certain period of its latter years, as the three, four, or five last years of the lease. All these circumstances, operating upon the judgement of each farmer, must necessarily produce great variations in the successive cultivation or rotation of crops.

One general principle pervades and guides the whole system of Berwickshire husbandry, and may be said to form

form its rotation, or course of crops; pasture and tillage alternately. While under tillage, a green crop, clover, turnips, or pulse, or a fallow, invariably intervenes between every two crops of white corn. Keeping these two circumstances always under consideration, the following plans may be adduced as instances of the most common practices in this county, by judicious farmers, upon various kinds of soil, and digested under distinct heads.

It is not, however, to be concealed, that a very small number of farmers still persist in continuing the antiquated practice, now exploded by all good managers, of sowing successive crops of white corn, and neglecting, or negligently performing, the fallow process. But the miserable appearance of the crops on lands so managed, is a sufficient argument to convince themselves, were they not obstinately bent against conviction, of the unprofitableness and barbarism of the practice. Such successive crops of white corn are very emphatically termed, in the provincial dialect, *award*, or *awkward crops*.

2. *On Turnip Soils.*

After having remained in grass, for one, two, or more years, the land is broken up during winter, or early in spring, the former by much the better practice and is sown with oats, after one ploughing; or it is broken up in July or August, when the foggage or lattermath of the hay land is sufficiently grown to admit the stock; it receives two ploughings across each other, and a good harrowing after each, to break down and reduce the grass clods, and to kill and bury the grass and

and clover roots; it is then ridged in convenient breadths of flat ungathered lands, and sown with wheat in October or November. This is provincially named *rag fallow.* Often it is sown in October or November with wheat after one ploughing only. It may be observed, that one ploughing is quite sufficient for procuring a crop of wheat from lay, where the soil is clay or tending towards that kind of soil; whereas, on dry turnip soils, the rag fallow, above mentioned, is necessary to secure a crop; as that kind of soil, laid hollow by a single ploughing, would be vastly too much dried in the subsequent summer, to the very material injury of the crop.

In the second year, it is worked for turnips, as will be afterwards described, manured with farm yard dung, or muck, and sown with turnips in drills; and the crop intirely, or partly eaten by sheep where it grows.

In the third year, it is sown as early as possible with wheat; in proportion as the land is left free by the consumption of the turnip crop, from February to the middle of March, even sometimes a good way into April. Or if the turnips have been too late of being eaten off or removed, it is sown with barley or oats. Unless the soil be good, the wheat of the third year is seldom ventured upon, where wheat was taken in the first year of the course. Whichever grain crop is sown in the third year, mixed grass and clover seeds are sown likewise on the land.

Hence, in the fourth year, the land is again in grass; and upon some farms this course of cropping goes regularly on, in a rotation of four, five, or six years, according as the grass is allowed to remain one, two, or three years. But, in this course, the species of grain varies, being

being wheat, barley, or oats, according to circumstances. This may be termed the four shift course, or rotation of four; of which the most legitimate arrangement is:

1. Oats; 2. Turnips; 3. Wheat; 4. Grass; or,
1. Wheat; 2. Turnips; 3. Barley or Oats; 4. Grass.

Upon very good soils this course may be continued indefinitely with perfect success, from four years to four years, on condition that the turnip crop is always eaten on the ground by sheep, and that a good dressing of lime is given occasionally, as once in ten or twelve years. To preserve land thus managed in full vigour, it is requisite that the grass crop be pastured, or at least that the hay produce be returned to the soil in the shape of muck.

When the soil is inferior, this course requires the grass portion of its rotation to be protracted under pasture, for two or three years or more.

In very good turnip soil, with some power of adventitious manure, as on mill lands, or within the reach of town manure, a system of alternate white and green crops has sometimes been successfully carried on for a considerable term of years: as, 1. Wheat, from clover lay; 2. Turnips, eaten by sheep on the ground; 3. Wheat; 4. Drilled beans; 5. Wheat; 6. Turnips; 7. Wheat, &c. In this protracted course a crop of ray grass and clover sometimes takes the place of the beans.

Sometimes, upon breaking up rich old pastures, two successive crops of oats are taken; as the first crop often hardly suffices to rot out the matted grass roots, and the second crop is frequently even better than the first. But the soil must be good, and in high vigour, to admit

mit of such a practice with impunity. Perhaps in such rich old land it were better to interpose a crop of drilled beans, or pease, between the two grain crops. Thus, 1. Oats from old lay; 2. Drilled beans or pease; 3. Wheat; 4. Turnips, eaten on the ground; 5. Wheat or barley; 6. Clover and ray grass.

Not many years ago, on breaking up grass land, it was universal to take either two successive crops of oats, oats followed by barley, or oats followed by wheat. But this is now almost entirely abandoned, from conviction, founded upon experience, that it is by no means so profitable ultimately, as the more regular and lighter mode of cropping.

Where there is otherwise a sufficient breadth of grass land on the farm, either for the stock of the farmer, or for complying with the conditions of a close lease, in which the farmer is tied down to fixed rotation of crops, the following course is sometimes practised, to protract the recurrence of grass, and may be termed the six course shift, or rotation of six.

1. Oats from old lay; 2. Drilled beans or pease, or both mixed; 3. Barley, oats, or wheat; 4. Turnips, with muck or lime, or both; 5. Wheat, oats, or barley, and sown up with grass seeds; 6. Grass, for one, two, or more years, according to circumstances.

Or, leaving out the grain crop of the third year, and substituting turnips, it is reduced to the five course shift, or rotation of five.

1. Oats from old lay; 2. Drilled pulse; 3. Turnips; 4. Wheat, oats, or barley; 5. Grass.

From what has been already observed, it is obvious that no regular plan of rigid rotation can ever be carried on, through all, or even upon any, of the fields of

a well regulated and judiciously managed farm, under the alternate husbandry. Some fields remain longer or shorter in productive grass. Seasons or circumstances occasion grass seeds to fail in their first years growth, or in succeeding years. Markets, or peculiar circumstances in situation, induce a farmer to increase or to diminish his live stock, and consequently to throw more of his farm to grass, or to subject a larger breadth to tillage. Some fields are found, by experience, to pay better under tillage than others, and others pay better under grass. All these circumstances, operating in a variety of combinations, necessarily occasion frequent apparent anomaly, or seeming irregularity, in the course of crops, while the farmer still firmly adheres to the uniform principles of conduct, already indicated as constituting the essence of the alternate husbandry.

In the high situations of the county, towards the hills and moors of Lammermoor and Lauderdale, where land is kept under tillage, chiefly for the purpose of producing turnips and artificial grasses, as winter and spring food for live stock, the cultivation of grain is a very secondary consideration, and principally serves to supply the family, servants, and horses of the farmer, and to provide litter and winter fodder for the cows, young cattle, and horses; and by which, reciprocally, muck is procured for the production of turnips. In these places a much larger proportion of the farm is always under pasture grass. The general principles of the alternate system remain, as already particularised, and oats is almost the only grain cultivated, sometimes a little barley or big, provincially termed *beer*, or rough beer. In such situations, the most favourable parts of the farm, either fenced for the purpose, or merely

guarded by herding, are cultivated under the following course of crops:

1. Oats from old lay; 2. Turnips, with the whole farm manure, often dressed with lime; 3. Oats, barley, or big, with grass and clover seeds; 4. Hay, and then restored to pasture; which is continued from one to seven years, or more, according to circumstances, so as always to have as large a breadth of turnips every year as can be effectually laboured and manured.

In these high situations it was formerly very common to prepare a piece of land for breaking up in the following manner: It was first inclosed by turf walls, provincially *feal dykes*, about five feet high; and these were often secured on the top by a slight dead fence of whins, or by short stakes and straw ropes. This temporary field was divided into a series of small folds, proportioned to the sheep stock, by cross turf walls, that the sheep might always have a clean dry bed. During one whole season, the sheep stock of the farm was brought into these folds, in succession, every night, for the express purpose of manuring the soil. The turf walls were afterwards thrown down, perhaps preserving the exterior one as a fence, and their ruins were spread over the land, which was then ploughed, to undergo a course of crops. Where this folding system is still practised, the rotation already mentioned is now uniformly followed; but before the introduction of the modern husbandry, this folding was much more extensively used, and was universally succeeded by a most injuriously deteriorating plan of bad husbandry. Three or more, even to five or seven, successive crops of oats were taken, without rest or manure, till the fertility of the soil was entirely exhausted, and the land

became filled by weeds. It was then left to nature, slowly to recover verdure and fertility, by a number of years pasture, without even the aid of any artificial grasses. This was called allowing the land *to lie lee*. In the present day this species of folding is hardly at all used, being found injurious to the sheep stock, in a degree fully more than equivalent to the advantages deriveable from it. In its stead, when land is broken up from old pasture for improvement, it gets a thorough dressing of lime or marle; it is completely cleaned and manured by the immediately succeeding crop of turnips; and it is sown off, with artificial grasses, as quickly as possible, while in its highest state of fertility.

Anciently, the employment of paring and burning, and the first introduction of lime and marle, as means of exciting fertility, instead of being used as sources of permanent improvement, were employed, like folding, merely as stimulants or provocatives to extraordinary productiveness from the soil, which was scourged by excessive over cropping, till left quite exhausted and incapable of being restored to even its original lesser degree of poverty, until after many years of continued pasture.

In those former days the home muck of the pasture farms, arising from the cows and horses kept on straw during winter, was never applied to the farm; the fold was all that was ever given to the tillage land; and muck laid upon pasture was found to induce the disease of rot in the sheep. Middings, or dunghills, were therefore anxiously placed on the sides of streams, that winter floods might carry them away. Now they are carefully preserved for turnips, the great prop of modern husbandry, which has been entirely formed by that

that valuable root, and by the introduction of artificial grasses and clovers.

3. *On Rich Free Loams.*

On such soils the most profitable and most agreeable to cultivate, as almost uniformly producing abundant crops of all kinds, and excellent pasture, the system of cultivation does not materially differ from that already mentioned as followed upon good turnip soils. Indeed these two graduate so much into each other, as hardly to be distinguishable, except in some degree of extremes, as verging to clay, or as tending towards sand or gravel. Poor dry gravel soil may be considered as the commencement of a series which insensibly graduates to rich free loam, and thence to strong tough clay, with every possible intermediate degree between these extremes, and farther varied in all the gradations, by the depth of the surface soil, and the nature of the substratum, bottom, or subsoil.

On rich intermediate loam, having a free bottom, the cultivation of turnips, instead of fallow, forms the substantial basis of all good husbandry, and the production of rich plentiful pasture, the superstructure, or ultimate object, while heavy crops of excellent grain, with luxuriant abundance of straw, to produce manure and to support fertility, fill up the intermediate steps. The course of crops on these, regulated by consideration of circumstances, as already observed in regard to turnip soils, generally is,

1. Oats, or wheat, from lay; 2. Turnips; 3. Wheat, barley, or oats, with mixed grass seeds; 4. Grass, for

hay or pasture, and to remain for one, two, or more years; or,

1. Oats or wheat; 2. Drilled beans, or pease; 3. Wheat, or barley; 4. Turnips; 5. Wheat, barley, or oats; 6. Grass, continued longer or shorter, according to circumstances; or,

1. Wheat, or oats; 2. Drilled pulse; 3. Turnips; 4. Wheat, oats, or barley; 5. Grass. These form the four, five, or six course shifts, or rotations, already mentioned, and which need not be farther enlarged upon here, except to notice, that the rich free loam admits of more frequent repetition of wheat crops to advantage than can be safely ventured upon the more sandy or gravelly turnip soil.

4. *On Strong Clays.*

On these the same general principles of alternate husbandry guide the tillage operations, which are uniformly grounded upon a complete over years naked fallow, as formerly described. As clay soils are of very various degrees of fertility, the system is accordingly varied, in its particular application, according as they are more or less adapted to the profitable growth of grass for pasture, the universal restorative of all over-cropped soils, and the sure prop and maintenance of all soils already in a state of improvement, to preserve them in constant fertility. A very generally approved rotation is,

1. Oats from lay; 2. Fallow, with muck or lime, or both; 3. Wheat, with mixed grass seeds; 4. Grass, for one or more years; or,

1.

1. Oats from lay; 2. Drilled beans, with muck or lime; 3. Wheat; 4. Fallow, with muck, if the beans got lime, or lime if the land was then mucked; 5. Wheat, with mixed grass and clover seeds; 6. Grass, to continue longer or shorter, according to circumstances.

5. *On Weak Clays and Moorish Soils.*

The alternate system is followed likewise upon these and upon the same general principles that have been already detailed; but, as possessing much less fertility, and as very speedily exhausting manure, and giving vastly less means of supplying it, in consequence of weaker crops both of grain and straw, a smaller proportion of such soils, under good management, is devoted to tillage, and consequently a much larger breadth is kept in grass. The most approved rotation for these soils is, 1. Oats from old lay; 2. Fallow, with muck or lime, or both; 3. Oats, or Wheat, with mixed grass and clover seeds; 4. Grass, to remain from four to seven years in pasture, according to circumstances.

6. *Miscellaneous Circumstances.*

Upon all the varieties of soil, a certain quantity of potatoes must be cultivated yearly on every farm, for supplying the family and servants of the farmer. These of course must fall into some portion of one or other of the rotations which have been mentioned above. But, unless near large towns, where they are substituted for fallow or turnips, they never constitute a regularly com-

plete part of any rotation; because unsaleable, unless at prices inferior to the expence of their cultivation; and if universal, or even but a little more extended, they would be unsaleable almost at any price. Some farmers grow their potatoes on a portion of their fallow or turnip break, while others prefer a portion of the land that has been broken up from lay, or of that which is devoted to pulse, in any of the foregoing enumerated rotations.

Most farmers grow likewise a portion of spring tares, to be cut for soiling their horses, in the interval between the two cuttings of the clover crop. This accordingly occupies a portion of one or other of the breaks, in the course of crops adopted on the farm, usually so as to be followed by the turnip or fallow break, before the land is again laid down to grass, or is sown upon a portion of that division of the farm which is appropriated to beans or pease.

A small quantity of flax is grown upon most farms, partly for the use of the family of the farmer, and partly as constituting one of the usual stipulations with hinds or married ploughmen, instead of part of their wages. This is grown on any convenient corner, but always so as to be followed by turnips or fallow, before the land returns to grass.

All of these particular crops which, though forming a necessary and essential portion of the cultivation in each farm, do not constitute any full portion or break in its regular rotation, will be considered in their proper places in the sequel, when treating of the crops commonly cultivated, and need not, therefore, be any farther insisted on in this place.

7.

7. *Of Changing Seed.*

To prevent repetition hereafter, while particularly considering the several crops commonly cultivated in this county, some notice may be proper in this place respecting the common custom of changing seed, which is more especially practised in regard to wheat and oats, but is likewise attended to with respect to barley, beans, and pease, and ray grass. As the seed of the different clovers are never attempted to be saved in this county, every year is an effectual change for them, as they are all procured from England, Holland, or France. It is said that very good clover seed might be procured from America, and a change of clover seed, and bringing it from a soil and climate perfectly new, might be of use.

Generally speaking, the great bulk of the seed of grain sown yearly in this county, is the produce of the several farms on which it is sown. But all careful husbandmen purchase a small part of their seed every year, either from distant parts of the island, or from neighbours, who have soils of very dissimilar quality from their own farms. From the produce of this small yearly purchase, the large breadth of the subsequent year is supplied with seed. Where one farm contains soils of very dissimilar natures, and a good stock has been once attained, moderate attention may suffice to perpetuate a change of seed at home, and to supply changes to neighbours. This production of changed seed, by careful attention and selection, is a particular art or employment, in consequence of which some farmers, more especially in Northumberland, always command a superior price for the grain produce of their farms, by persisting in a careful yearly selection, to pre-

serve a character for good varieties unmixed. The plan followed by these seed farmers is nearly thus. Having a select variety of a particular grain, of approved character, a small quantity is most carefully hand-picked every year, to remove every particle of admixture. This culled quantity is sown by itself, and its produce carefully preserved separate. In the second year this produce is sown upon a larger breadth of the seed farm, and the produce of this is sold as selected seed.

Hitherto this subject is rather of a speculative nature, and would require a series of accurate experiments to establish upon fixed principles. Thus much is certain, that every species of grain must once have been a variety, selected for cultivation from common wild plants, and probably improved by careful culture. All grain is liable to degenerate, by continued similar culture on similar soils, whether by the multiplication of concealed or unobserved varieties in the original stock, or by deterioration on the same or similar soils, is not ascertained, but might be by careful experiment. In no grain is this more obvious than in oats; the very best selected varieties of which, by long reiterated sowings on the same land, are apt to degenerate into long, lank tailed grains, tending towards the wretched variety called wild oats. Careful selection by hand at home is one effectual means of removing this evil; judicious purchase of good seed, from dissimilar soils, or from distant situations and different climates, is another mode of securing the same advantage. A judicious combination of both is certainly the very best possible way of always possessing excellent selected varieties

varieties of every kind of seed that is cultivated on farms.

Every judicious farmer is careful to provide a sufficiency of good seed for himself, in one or other of the methods above mentioned, but the provision of selected seed for sale at high prices must remain in the hands of a few, as a particular business. If very generally followed the expence of time, labour, and attention, would greatly counter balance the benefit, as competition among many sellers would reduce the price nearly to that of ordinary grain of the same quality.

SECTION IV.—WHEAT.

1. The preparation of the soil for wheat has been already mentioned, in detailing the fallow process, and the customary rotation of crops. It follows naked fallow, or turnips after one ploughing, or lay, either after one ploughing, or after what has been named rag-fallow, or it is sown after beans, pease, or potatoes, after one ploughing.

2. The manuring for wheat has been already in a great measure detailed, in giving an account of fallow and the ordinary course of crops. Naked fallow and the turnip crop are manured with muck, or the farm yard dung, or with compost or lime; and the land of the turnip crop is farther manured by the sheep which eat

eat its produce. Once for all it may suffice to say that top dressings, or manures, thrown or spread over the growing crops, are not hitherto known in this county. Sea weed forms a single exception, as from the soluble nature of its gluten, in which its fertilizing quality resides, it may be laid on at any time when the sea throws it on shore. Once only the reporter saw a field of growing wheat receive a top dressing of lime and earth compost, but it was in a different county.

3. The season, or times of sowing wheat, from what has been already said, must be very various, as falling into the several parts of the different courses of crops already mentioned. After fallow, according to soil or season, from the middle or end of August, to the end of November; as upon wet clays advantage must be taken when the soil is in a situation to admit the harrows. In the opinion of several judicious and experienced farmers the best season of sowing wheat, on fallows, rag fallows, and once ploughed lays, is between the 20th of September and the 20th October. After pulse, whenever the season will admit of working the land and sowing, from the middle or end of September, to the months of January and February. After turnips, when these are eaten or led off, and the land can be properly ploughed and sown, from the beginning of January or earlier, to the middle of March, or even a good way into April, though this last is certainly subject to much risk, from late harvests and imperfect ripening, as has been particularly experienced in crop 1807. For the general average of seasons, and at seed time, nothing can be predicted concerning the weather of summer and autumn; the first week of March seems to be the latest time at which spring wheat can be sown with perfect safety,

safety, and a reasonable assurance of a full crop of well ripened grain.

4. The modes of sowing are either broad cast, by hand from a sowing sheet, or drilling, as has been before explained. Very rarely is the seed, in this county, ploughed under, by a shallow furrow.

5. The quantity of seed is regulated by the farmers judgement, in proportion to the fertility of the soil, and earliness of sowing; less being given as these prevail. After fallow, on good soils, and in high order and early sown, two and one-half bushels to the acre may suffice; sown in spring and on weak soils, three and one-half bushels may often be necessary for a full crop. In the former case, the seedling plants have time and vigour to fill up the field by suckers, called planting out or *tillering*; in the latter, many of the suckers never come to maturity, and the field requires to be stocked with principal or original plants.

6. Before sowing, wheat is almost universally pickled, or steeped, to prevent or lessen the disease of smut. Though pickled wheat be sometimes partially smutted, it is vastly less liable to that disease, than when sown without that salutary precaution; more particularly when it is carefully performed. The common practice is, to wet the seed thoroughly on the barn floor with stale urine; after which a quantity of dry quicklime in fine powder is sifted upon the heap, and mixed thoroughly, which prevents the seed from clagging in the hand of the sower, or in the hoppers and funnels of the drill machine. In the application of the quicklime, a chemical decomposition of the ammoniacal salts of the urine is produced, and ammoniacal gas, or volatile alkali in vapour is evolved; but the reporter does not presume

sume to guess even at the effects that may be produced by any of the chemical agents employed. The best and most effectual mode, is to steep the seed in tubs of stale urine, and to skim off the light grains. The heavy grain is then lifted out with sieves, and laid on the barn floor to drain; and then powdered with quicklime. No more ought to be pickled at a time, than is to be sown that day or the next, as the process is apt to kill the seed, especially if it lies long in a damp heap; but if immediately spread out thin and dried, seed pickled in harvest will grow in spring. Some farmers use a strong brine of sea salt; but the chamberlie, or stale urine, is ascertained, by long successful experience, to be perfectly effectual, and it is greatly less expensive than sea salt, the efficacy of which is not so generally acknowledged.

If pickling does not altogether prevent the smut, there is at least no doubt of its lessening the disease most materially. One young farmer neglected this salutary preventive some years ago, on a mistaken notion that it would be of no service, because its mode of operation, and the nature of the disease were both unknown. He afterwards candidly acknowledged that his wheat crop was deteriorated several hundred pounds in consequence of his scepticism; while all his neighbours comparatively escaped, in a season when smut prevailed more than ordinary.

7. There are a considerable number of varieties of wheat, which may be generally arranged under the denominations of the red and the white. Red and white Kent, and white Essex, are the most generally sown in this county. Of late years, owing to the marked difference in price at market, in favour of white wheat, that

that variety has been chiefly cultivated, and red wheat is seldom seen. Woolly eared wheat is hardly ever to to be met with, except mixed among others, when it is considered as a kind of weed; as its woolly husks retain moisture in wet harvests, and make it more apt to grow in the ear, than the smooth husked varieties. A singular variety, with branched or compound ears, has been tried lately in small patches; but the inferior quality of its produce quickly occasioned it to be laid aside.

Within a few years, a variety of white wheat, under the denomination of *thin chaffed*, has acquired considerable reputation in East Lothian, and begins to make its way into Berwickshire, at least as a change of seed. As it has not yet had a sufficient trial, to admit of any opinion respecting its quality, it is principally mentioned on account of a rumour respecting its origin. An East Lothian farmer, riding past a farm yard in Berwickshire, is said to have noticed a few stalks of wheat growing on a dry hedge bank, ripe at an early period. Curiosity led him to examine them; and thinking the quality good, he conceived that the accidentally discovered variety might suit his own dry turnip soil. He accordingly carried them home and propagated them with attention; and, from this trivial commencement, and accidental observation of an experienced eye, a probably valuable variety has sprung into notice.

Another variety is gaining reputation, under the singular name of *creeping* wheat; because it plants out the ground by suckers, more abundantly than most other varieties, and is supposed to be peculiarly prolific.

All the varieties of wheat cultivated in Berwickshire belong to the Lammas or Winter species, the triticum hybernum of botanists. The May wheat, or triticum aestivum,

aestivum, has long been exploded, as utterly unsaleable, in competition with any of the varieties of Lammas wheat. A great deal of spring wheat, however, is cultivated yearly, after turnips; but this is always one or other of the varieties of the Lammas wheat, and gets the name of *spring* wheat merely on account of the season of sowing. It is decided by long experience, that the produce of spring sown wheat, used as spring seed, ripens about a fortnight earlier than the produce of the same wheat winter sown, when used as spring seed. This is an important observation, and deserves to be very particularly attended to in the cultivation of spring wheat; as a fortnight during harvest, especially when that is otherwise late, may prove of very material advantage or detriment to the crop.

8. The depth at which the seed is deposited in the soil, must depend on whether it is sown broad-cast or in drills. In the former case, it is altogether uncertain and unequal, depending on the tenderness of the soil, and the industrious use of the harrow. In drilling, the coulters can be regulated in some measure to any depth: Yet, as they are moveable upwards, to escape stones or other obstructions, and as their penetration depends altogether on their own weight, it must vary according to the tenderness and stubbornness of the soil. Besides, the land is always harrowed after the drill machine; which operation may very materially alter the relative depth of the seed. The depth, therefore, may vary from a quarter of an inch to two inches; but it is believed that minute attention to this circumstance is no way material, as it is quite sufficient that the seed be actually covered from the

the depredation of birds. This idea is strongly corroborated by the vigour with which shaken wheat vegetates in the ensuing year, among sown grasses, though not at all covered by the soil.

9. The drill machine most generally approved sows at three several intervals, of 12, 10½, and 9 inches, either on lands or ridges expressly made on purpose, twelve and a half feet broad, which are sown at one bout, going up half the ridge and down the other half, directed both times, by one wheel going in the interfurrow. It sows six, seven, or eight rows at once, according as the intervals are previously adjusted; but the most usual interval is 10½ inches, and seven rows, consequently fourteen rows on a ridge of twelve feet and a half. On dry turnip soil the drilling is often carried on upon completely flat unridged land. For this purpose, the machine has a lateral drag attached to it, that can be removed to either side, and which makes a deep scratch or slight furrow in the ground, on one side of the machine while going along the land, by which each successive bout is regulated, as the horse must be made to tread exactly on the scratch made during the preceding bout. This requires considerable experience and very marked attention in the person who leads the horse, that the work may be performed with perfect regularity. And this circumstance is probably the greatest difficulty in the way of a more general adoption of the drill husbandry in grain crops.

There has not been sufficient experience of drilling in this county, nor any comparative experiments carefully made and recorded, to enable the reporter to give any decisive facts, respecting its superiority to broad-

cast

cast sowing. This much however is certain, that all the seed is completely covered up from danger of being preyed upon by birds, and consequently that somewhat less seed may serve to the acre; but nothing particular can be reported as to the actual quantity of this saving. In land that is much infested with annual weeds, drilling is unquestionably a very material improvement; as it enables the farmer to have his land hoed by hand, between the drills, to destroy one crop of these weeds, before sowing the clover and ray grass seeds. It must not, however, be concealed, that the drilling of grain crops, in this county, so far from gaining ground, is rather falling ito disuse.

10. Dibbling is not at all practised in this county; and, therefore, no particular notice can be taken respecting that operation in this report.

11. Wheat, and all other grains, are most carefully water furrowed, on all heavy soils, or wherever the bottom is retentive of moisture, that all wetness may have ready means of quickly running off. It is, however, needless to repeat the particular circumstances of this process, already detailed in treating of the fallow process. On the contrary, on dry turnip soils with a free bottom, it is very common to raise a small single bout drill or little ridgelet, in the interfurrow, as a mark or direction for the sower, which is harrowed down after the seed is deposited, and the land becomes then reduced to a perfect level.

12. While growing, if sown broadcast, wheat gets no culture whatever, except the operation of the harrows and roller in spring, when the grass and clover seeds are sown; and except cutting thistles in summer by the weedhook. Hand weeding is hardly ever practised,

except cutting over thistles and other large weeds, by means of a very simple implement called the weed-hook. Indeed, hands are so scanty, and labour so very expensive, that hardly any attention can be given to hand weeding. Generally speaking, every person who can be procured is fully employed, during summer, in hand hoeing turnips and other green crops. When sown in drills, wheat is for the most part hand-hoed, immediately before sowing the grass and clover seeds, which are sometimes covered by the operation of the hoes. Two different kinds of hoes are used for this purpose, by different farmers: Some use the common hacking hoe, which is employed for hoeing turnips; while others prefer the pushing, or Dutch hoe, which is more expeditious. Sometimes this operation precedes the sowing of grass and clover seeds; while sometimes these seeds are sown first, and covered in by the operation of the hoe: If after hoeing, the land must be harrowed; if before hoeing, the roller completes the work.

13. Feeding the young wheats, by ewes and lambs in spring, is hardly ever ventured upon in this county; because giving a check to their growth, which our climate does not warrant, and thereby risking late harvest work, which is always attended with danger. This practice, besides, is little called for, as every farm of any extent uniformly has a proportion of young clover and ray grass, to supply the ewes and lambs, when turnips and ruta baga fail.

14. Wheat is universally reaped by the sickle or hook. The use of the scythe, in a few rare instances, can hardly be considered as an exception; and almost every farmer is too much afraid of the rough measures of that quick moving implement, to risk its employment

upon a crop so easily shaken out, and so valuable. In reaping, it is the universal endeavour of every attentive farmer, to have grain of all kinds cut as low as possible; and it is ascertained by experience, that the additional grain and straw thereby carried to the rick yard and barn, is greatly more than sufficient to pay amply for the increased expence and trouble of low cutting. This subject has been particularly treated of in the East Lothian report, in consequence of direct experiments instituted for ascertaining the comparative expence and produce between high and low cutting, and is not, therefore, any farther insisted on here.

Reaping is universally performed by regular gangs or bands of reapers, hired expressly for the harvest; the hinds wives and other bondagers, to be afterwards noticed in Ch. xv. forming part of the harvest establishment. The harvest strength is distributed into bands, consisting each of six reapers, provincially *shearers*, with a binder or *bandster*, which squad is provincially termed a *ban-win*, quasi winning or gaining a band, or binding of the sheaves. The *ban-win* is subdivided into two parties of three reapers in each, called a *rig* or ridge, as these three cut the grain of one ordinary ridge, or land, of fifteen feet broad. The middle shearer of each ridge makes all the bands, composed of two handfuls of corn in the straw, tied or twisted together at the ear ends, called the corn knot, and spread out on the ground. Where the straw is very short, these bands are often pulled up by the roots, but this is hardly ever necessary with wheat. The bands are successively filled by the shearers, and bound into sheaves by the bandster, who likewise sets up all sheaves of his two ridges in stooks or shocks. In wheat or rye, owing

ing to the length of straw, each stook contains six pairs of sheaves on end, and two head sheaves or covers; but the covers are often omitted. The corn knots of the bands are always placed outwards. Half stooks of wheat or rye contain four pairs of sheaves on end, with one cover or head sheaf. In oats and barley a full stook contains only five pairs of upright sheaves, with two covers; and a half stook three pairs on end and one cover.

A good harvest steward is always at the utmost pains to preserve order; to cause the reapers to cut as near the ground as possible, and to make clean work; recalling every reaper, behind whom any uncut stems, or ill cut stubble is seen, that it may be cut over again; not from any actual benefit to be derived from this second cutting, but as a kind of punishment or shaming, to make them cut better, and to deter others from careless slovenly work. At first, this occasions some strife, as the adjoining bands are apt to contend about the duty of reaping the furrows, and every one either disclaims a fault, or alleges some excuse for negligence. A little firmness, without passion, soon produces order; and any incorrigible individual is dismissed contemptuously from the field.

Sometimes two adjoining ridges, or two bandwins, enter into a competition, called a *kemp*, as to which of them shall first arrive at the lands end. This is a most wasteful manner of proceeding, and must be instantly checked, by calling off from one or other of the contending parties, whoever seems most forward to instigate the mischief, with orders to work at some other part of the field.

The harvest steward must attend continually behind the gang of reapers, carefully examining their performance, stimulating regular industry, and preventing negligent work. He ought to have a rake in his hand, to gather scattered grain, which he shakes into the unbound sheaves. Where the crop is much interwoven, so as to occasion a good deal of waste in cutting, it is often good economy to have one or more rakers, constantly employed behind the reapers, according to the extent of the gang.

The wages of reapers have risen rapidly of late years; probably owing partly to the diminution of hands, in consequence of such numbers having gone into the army, militia, and navy; partly, perhaps, from increasing cultivation. Last harvest, 1808, in the low country, women received from two shillings to half a crown, and men, from two and fourpence to three shillings a-day, besides harvest provisions, which shall be specified afterwards.

The hours of harvest labour are, from sun rise to sun set; with an hour for breakfast, half an hour at noon to rest, an hour for dinner at one o'clock, and half an hour to rest about four. If work does not commence till after breakfast, the remainder is reckoned a three quarter day. If not till one o'clock, a half day. A smaller portion than either, is called a quarter day.

The customary diet is, a full allowance of oat meal porridge for breakfast, with a quart of skimmed milk, to each person; a loaf of fine wheaten bread, of a pound weight, and a quart of good table beer for dinner. The reapers usually provide their own suppers, and are paid at the end of harvest with half a *forpet* of barley,

barley, about the sixteenth of a bushel, for each days work of the whole harvest, instead of suppers.

In older days, within memory, the harvest dinner was a full allowance of broth, with the common household bread of the country, barley and peas mixed; but that has long been given up, for two substantial reasons. In the first place, during harvest, the farmers family has no time for cooking and baking, as every person, who can possibly be spared, is employed in the field; and, secondly, because the reapers used to swallow such loads of the unsubstantial broth, that they were often unable to work at all, till they had disgorged the burthen, and consequently were unfitted for effective labour.

When bread and beer were first adopted, it was customary for the farmers wives to bake and brew the whole at home; and one well authenticated instance of amazingly industrious exertion, may be mentioned, of a farmers wife who, for several successive harvests, with the assistance of two maids only, baked and brewed for a field containing thirty *bandwins*, or 210 individuals, besides the immediate family, and the hinds, or ploughmen of the farms occupied by her husband. But the exertion was enormous, and induced premature old age, attended by numerous painful ailments. Farmers wives now, give every laudable attention to economy; but, like their husbands, have risen above the situation of superior drudges, as their education and situation and conduct justly entitle them.

Reapers who come from a distance, and are hired for the whole harvest, or any fixed period, are lodged by their employers, and get their whole victuals, whether the weather admit of work or not, and upon

Sundays. If hired by days wages, they are not paid for idle days, from bad weather, or when waiting for ripe corn, though victualled. Those again, who live near, go home at night, and neither get wages or victuals for idle days.

Upon an average of crops and seasons, each ridge of shearers is expected to cut down an acre daily. The expence of which, at the wages of 1808, allowing tenpence a-head for breakfast, dinner, and supper, may amount to about twelve or fourteen shillings. A strong crop, or one that is much laid down, more particularly if irregularly so, will take more work, and will of course be more expensive. The expence of leading, stacking, and covering, may amount to nearly three shillings an acre additional; so that the complete expence of harvest work in the lowlands of Berwickshire, for 1808, cannot well have been below fifteen shillings for each acre of grain.

In compliance with the new plan, this cursory account of harvest work, is here inserted; which the reporter intended to have placed in the xv. chapter, in the general account of rural economy. It must be noticed, however, that the harvest work for wheat, oats, and barley, in this county, are very nearly the same: hence, in the sections devoted to those other grains, only such differences as occur will require to be mentioned.

15. Wheat is subject to mildew, smut, and rust; but as there is nothing particular in these diseases in Berwickshire, and as no cure or prevention is there known, except pickling, already mentioned, it seems needless to enlarge here on the subject; as it has been already sufficiently discussed in the reports of other counties;

counties; and in a separate publication by the learned President of the Royal Society.

In autumn 1808, the wheat crop having been very universally and materially injured by mildew, a series of queries on this subject were largel circula ed by Sir John Sinclair, Bart. President of the Board of Agriculture. One copy of these queries having been transmitted to the reporter, he has deemed it proper to subjoin these, with his answers, in the appendix, as intimately connected with his duty as agricultural surveyor of this county; and which, as one among a multiplicity of instances, evince the lively interest which the President of the Board of Agriculture continually takes in every thing which concerns the welfare and improvement of the country. The President has likewise recently published a very ingenious and satisfactory essay on this subject, containing the results of his enquiries in various districts both of Scotland and England.

When smutted, many farmers wash their own wheat, by floating it in large tubs, skimming off the light grain and smut balls; after which it is spread out on cloths to dry in the sun and air, or dried on a kiln. Perhaps it were better to dress as well as possible, and leave the washing and drying to the corn-dealers, who have kilns for the purpose.

Notwithstanding the violence and velocity of the thrashing mills, it is a certain fact, that they do not bruise the smut balls, nearly so much as is done by the flail or swiple; insomuch, that machine thrashed wheat, though containing a considerable proportion of smut balls, is not blackened or dirtied, in any degree equal to that which has been beaten out by the flail.

Hence, by industrious dressing, all the balls may be cleaned out, and the wheat sent to market in good order.

Besides the three diseases above mentioned, a species of smut frequently prevails on wheat, quite different from that described in authors. In this other species of smut, the black powder is quite external, and not confined within the skin or bran of the grain. The whole form of the grain is entirely obliterated, and nothing remains but a few irregular fibres of the husk or chaff. This disease exactly resembles the blackness so frequent upon oats and barley, and is obvious and complete whenever the ear bursts from the sheath or shoot-blade. It does very little harm, only destroying such ears as it infects, and does not spread; neither does it at all injure the sample.

In 1807, the reporter having observed a good deal of this species of smut or blackness, in one of his fields of wheat, just when the grain was forming, and the flower going off, tried the following experiment, to see if the disease was infectious. He pulled a number of these blackened ears, and whipped with them a tuft of growing wheat, in a bare or missed part of the field, so as effectually to dirty the whole ears of that tuft, which was carefully marked. But, at harvest, the ears of that tuft were entirely free from smut.

The distempers named red-gum, cockle-eared, and root-fallen, have not reached the knowledge of the reporter. In some years, that have been cold and ungenial, at the time when the ear burst from the sheath or shoot-blade, he has seen the points of the ear caught in the angle, or junction of the two edges of the leaf, forcing

forcing it into a curve; but has not seen this so extensive as to merit the name of disease.

In years of peculiarly windy weather, the stem, where it enters the earth, is often blown about, in a whirling manner, forming a kind of conical hollow, and the coronal roots become detached from their connection with the soil. This is provincially called *wind-waved*, and is of very material prejudice to the crop; as the ears of all such plants, deprived of their natural means of nourishment, produce only abortive or ill thriven grains. But no cure, prevention, or palliative is known for this evil.

16. When thoroughly dried in the straw, which is easily known by the knots of the straw becoming brown, and free from all appearance of moisture, and by the straw in the heart of sheaves not giving a sensation of coldness to the hand thrust in, the crop is led into the rick-yard, and built in cylindrical ricks, with conical pointed tops. These are thatched with straw, which is secured by straw ropes. It does not seem at all necessary to give a minute description of the manner of building and thatching these ricks; as they are extremely simple, and are performed nearly in the same manner over all Scotland and the north of England. It may, however, be proper to mention, that hardly any difference exists, in this part of management, between wheat and the other grains and pulse.

The custom of housing grain, in the straw or ear, is utterly unknown in this county, indeed in all Scotland and the north of England. Upon large tillage farms, this practice is in fact utterly impossible, on any tolerable principles of economy. To house the grain crop of even a moderate farm in this county, would require

quire a barn or barns which could not be built, in all probability, for less than L. 3000, independant of all other accommodations necessary for the farm; while such a farm could be perfectly accommodated with every necessary conveniency for half that sum, according to the system here pursued.

Consequently, instead of L. 1500, for the complete accommodations of a large corn farm, according to the present system of this county, L. 4500 would be requisite; which would either be a loss to the proprietor of the interest on L. 3000, and the insurance and tear and wear; or all of these must be paid by the farmer, for no use whatever. In fact, the real loss must ultimately fall upon the proprietor; and, therefore, such a system would certainly be a loss to him, on the long run, or from the first, of not less than L. 220 a-year, upon a farm perhaps of L. 1000 to L. 1200 rent.

17. Very few farms, of any importance, are now without the almost indispensibly necessary accommodation of a thrashing-mill, already sufficiently described in chapter v. section vii. And the operation of dressing the thrashed grain is particularised in the next succeeding section of the same chapter.

Upon small farms, which cannot afford that apparatus, grain of all kinds is beat out on the barn floor by flails. The old allowance for this operation, was one twenty-fourth part of the grain thrashed out; by which, in dear years, the thrashers, barn-men, taskers, or lot-men, often became comparatively rich.

18. The produce of a wheat crop is necessarily exceedingly various, on different soils, according to a variety of influencial circumstances, in season, tilth, manure, and course of crops. Forty-two to forty-five bushels

bushels an acre, is esteemed a large produce, on good soils, in high order, and favourable years; eighteen bushels a very poor crop. From twenty-four to thirty bushels of wheat may be considered a fair average upon middle soiled farms. The application of produce, except so far as needed for seed and family use, is invariably by sale, to corn-dealers or flour-millers.

19. The prices necessarily vary in different years, as in all other districts, being regulated by produce and demand, and very much influenced by the state of markets in Mark-Lane; as most of the surplus wheat of the county goes from the Port of Berwick to London. The average prices of wheat and other grain, for a considerable number of years back, will be given in a subsequent part of this report, under the article of Fiars.

A question has been made as to the best time for selling wheat, and whether the best ought to be sold first or last. This depends so much upon speculative views of the markets, as not to admit a definite answer. The best rule in general for a farmer, is to thrash regularly for supplying his fold-yards, and to sell as he thrashes, without pretending to incur the risks of grain speculations. He must often be guided, however, by demands for rent or otherwise. The best wheat of the farm is always selected for seed, and must accordingly be early thrashed, whether for sowing or sale; over years wheat being hardly ever employed as seed, though it is contended, it is said in other districts, that such wheat is less liable to smut, than fresher grain, the infection having lost its power or virulence by the seed being kept.

20.

20. Nothing particular occurs on the subject of grinding, or that at all seems to merit insertion.

21. There is nothing respecting the manufacture of bread from wheat in this county, that deserves notice. It may be sufficient to mention, that leaven is not used, nor even known; that artificial *barm* or yeast has been discontinued, owing to its generally making the bread sour; and that no mixture of wheat flour with that of any other grain is practised, or at least none such is acknowledged.

22. As wheat is always cut close to the ground, no stubble remains that can be applied to any particular use, except by turning in cattle and sheep to eat up the fallen ears, or any verdure that may be on the ground.

23. Gleaning is universally permitted on the fields of wheat, barley, and pulse; but never upon oats, which are always reserved for the live stock of the farm. Of late years, however, most farmers do not admit a single gleaner into any of their fields, until after the grain is led home to the rick-yard. Besides being infinitely troublesome to keep from pilfering, the gleaners being mostly relatives or neighbours of the reapers, these latter were very apt to leave loose corn, on purpose to serve the former. No person able to handle a sickle, ought ever, on any pretence whatever, to be allowed to glean, while any ripe corn remains unreaped in the surrounding district.

Having mentioned all the circumstances that relate to the culture of wheat, as minutely as appeared proper and necessary, only such differences as belong to the other grains will need to be particularized.

SECTION

SECTION V.—RYE.

Rye was once grown in Berwickshire in small quantities, especially upon uninclosed lands near villages, on which an outside ridge was often sown, along road sides, as a fence against poultry, as they will not feed on rye, and will hardly pass through it in search of other standing corn. Not being used for bread in this county, either plain or in mixture with wheat or any other grain, and being in no request with corn dealers or millers, it is hardly now ever sown, so that no account of its culture can have place in this report. Besides it would not suit the turnip husbandry, as requiring to be early sown, and as adapted for soils that are fit for growing turnips. Neither is it ever sown for spring feed.

SECTION VI.—BARLEY.

1. This grain follows variously in the steps of the general system of alternate husbandry, according to circumstances

cumstances, after turnips, pulse, and sometimes fallow, though seldom after this last, especially on good soils.

After turnips or pulse it is sown with one ploughing only, and as quickly as possible, upon what is termed *hot-fur*, that is not allowing any time for the new turned soil to lose its natural sap. If sown broad-cast it is instantly harrowed. As clover and rye-grass seeds are very generally sown with this crop, the field is commonly finished off by the heavy roller. It is never, so far as known to the reporter, put in without ploughing. The scarifier has been already said to be unknown in this country, so that, of course, it is never applied in the culture of this grain.

2. Manure is never applied to the barley crop, at least in the low lands, except so far as the land may be considered as manured by eating the preceding turnip crop on the ground. Lands near the sea, indeed, are often manured with sea weed, but seldom directly to the barley crop. In the higher part of the country, fallowed lands are sometimes manured and sown with barley, or rather with big, but more commonly applied first to turnips, and afterwards to either of these grains indirectly.

3. Barley is very often drilled in the manner already mentioned in regard to wheat.

4. The time of sowing follows oat seed, from the middle of April to the middle or end of May.

5. The common two-row barley, or hordeum dystichon, is universally cultivated in the low lands, but the hordeum tetrastichon, or four-row barley, commonly called rough beer or big, is often grown in high situations, as ripening considerably earlier. A variety of the two-row barley, commonly called sprat barley, has been occasionally grown on rich soils after turnips, under an idea

idea that it is stronger in the straw, and consequently less apt to lodge, when the crop is luxuriant. But its use has been so very rare in this county, that no particular account of it can be attempted here. On rich soils in such condition as to be hazardous for barley, wheat is now almost generally grown after turnips, and with great success.

6. The quantity of seed is regulated by the richness of the soil, and the judgement of the farmer, from three bushels to four and a half to the acre; but it is always safer to give rather too much seed than too little.

7. Nothing particular can be stated as to the depth at which barley is placed in the soil, farther than has been already mentioned regarding wheat.—Sect. 4. § 8. of this chapter.

8. Rolling has been already mentioned at the beginning of this section. When drilled, barley is usually hand-hoed, before or after sowing the grass seeds, as already mentioned in the 12 § of wheat culture. It is never weeded by hand, any farther than cutting thistles, and other large weeds, by means of the weed-hook. If a large crop of annual weeds, as wild mustard and rape, provincially called *runches*, springs up early, they are sometimes mown, before the grain crop gets into the shoot-blade.

9. Barley is often mown, either by the naked scythe, or with the aid of a bow, and the grain is always mown outwards, or from the standing corn. After laying in the swath for some days, it is taken up and bound into sheaves, and stooked. The stubble is carefully raked, and the rakings tied into bunches, which are led home with the rest.

When

When cut by the sickle, the management does not materially differ from that already detailed respecting wheat. When reaped in catching weather, barley is generally set up in *yetts, goats, gates,* or single sheaves slightly bound near the ear-end, and set upon their butts spread out. When ready to carry, these are bound over again in the usual manner of sheaves. It is stacked, thrashed, and dressed up for market, exactly as already mentioned for wheat. Some thrashing mills are defective in regard to separating the awns of barley from the grain, and various devices are often obliged to be had recourse to for that purpose, which, in the dialect of the county, is termed *humbling.*

10. The produce varies, according to soil and seasons, from twelve bushels, reckoned a very poor crop, to forty eight, or fifty, which is a very abundant one. Its application is, partly to pay farm servants wages, as barley bread is the customary household fare of the county; though fast yielding its place to wheaten bread. The principal part of the produce is sold to brewers for malting, to millers for manufacturing into pot or pearl barley, and to corn-dealers.

11. The straw is applied both as fodder to wintering cattle, and as litter to the cattle and horses of the farm.

12. The awns are given to cattle in the straw yard; sometimes along with boiled meat to cows.

13. Malt is only made in small quantities, by the country brewers; and nothing particular has occurred respecting its manufacture that is worth recording.

14. The price varies according to demand: For several years the demand was so trifling, and the price so low, as almost to have banished the culture from

soils of any decent fertility, and spring wheat became substituted very universally. A change of markets took place in regard to the crop of 1807. Barley having come into demand, for the supply of the Scots distillery; and wheat being very low priced. The average prices of barley and other grains, for a considerable number of years, will be found in the article appropriated to the fiars.

The barley crop of 1808 started, in this county, at a good price, from thirty eight shillings, to two guineas a quarter, and even rose to about forty-six shillings: But, from the prohibition of using barley in the distillation of spirits, and a stagnation in the trade of pot barley from Berwick to London, the price at the beginning of 1809 has fallen to about thirty-five shillings a quarter; and even at that much lower price there is no demand, and consequently hardly any sale. Barley, at the moment this report is at press, February 1809, is a heavy unsaleable article in the hands of the Berwickshire farmers.

15. The barley bread, used in this county, has mostly a small admixture of peas or bean meal, from a third to a fourth part or less. After passing both through a coarse sieve, to separate the fibrous part of the shell or husk, it is kneaded up with water and a little salt, without yeast or leaven, and is formed into round cakes about an inch thick. These are fired or baked upon a girdle, or flat plate of iron, hung over a clear fire, on which they are frequently turned; and they are afterwards thoroughly dried or toasted before the fire.

But this species of bread is very fast falling into desuetude, and will soon be almost entirely given up for wheaten bread; to the manifest injury of the farming interest,

more especially at the first part of the change, as much discouraging a very useful part of the ordinary rotation of crops, and forcing the substitution of wheat, often at considerable disadvantage.

SECTION VII.—OATS.

1. Oats are generally grown upon newly broken up lay; but sometimes follow pulse or turnips, according to circumstances in soil, seasons, or situation. In the hill district, they sometimes succeed naked fallow. In all cases, except the last, they are sown after one ploughing; almost without exception broad-cast, and are harrowed in the usual manner. They are never put into the ground without ploughing; and scarifying is not in use.

2. They are never manured for; except so far as they succeed turnips; and except, that sometimes the the lay is limed, either before or after ploughing.

3. Oats are hardly ever drilled, as the drill machine cannot work with any freedom on once ploughed lay; but are occasionally drilled when sown after turnips.

4. Dibbling is hitherto known only in this county by report; and population is too scanty in the district for this practice becoming at all general.

5. The time of sowing is from the beginning or middle of March to the end of April, according to seasons and other circumstances, the commencement of oat

oat seed, usually immediately succeeding the end of spring wheat sowing.

6. Several varieties or kinds of oats are cultivated in different parts of the county, according to soil and situation. These are distinguished into hot seed and cold seed; the former of which ripens much earlier than the letter, and are therefore preferred on high and late ripening situations. Of the *hot seed*, the Blainslie and Fawns varieties, so named from the farms or townships on which they were produced, were long in much repute, but have considerably lost reputation of late years; perhaps owing to lessened care in selection, having deteriorated or mixed the produce of the original selection.

In rich soils, Poland and Friesland or Dutch oats, are still much grown. But a new and valuable variety, under the strange denomination of potatoe oats, introduced some years ago from Cumberland, has acquired great reputation, and has almost banished the other varieties from good well managed soils. In the richer low lands, a selected variety of the Poland oats was long much esteemed, as plump, heavy, and productive. From the name of the farmer who first brought this selected variety into use, it was called Church oats; but, either from diminished care in continued selection, or owing to the higher character of potatoe oats, the Church kind has rather fallen into neglect.

Of the *cold seed*, or later ripeners, a variety called Angus oats was long much cultivated; but has now almost quitted the field in favour of the potatoe oats.

Yet, in soils of rather inferior fertility, the Angus oats are much more certain of giving an adequate return; and, in the opinion of many, the meal produced

from them is considerably sweeter than that from the potatoe oats, though not so abundant.

In the hill district of Lammermoor and Lauderdale, a variety called *red oat* has long been in high reputation. The Tartary variety has long been quite neglected, as very coarse, and giving a very poor produce in meal. The black oat is hardly known, except by name.

In some parts of Scotland, the distinction of oats, above mentioned, as hot and cold seed, or early and late ripeners, is termed *ear* and *late* seed; the former, our cold seed, or late ripeners, requiring to be early sown; while the latter, as ripening more early, may be safely sown considerably later in spring.

7. Oats are almost universally sown broad-cast, at the rate of six bushels to the acre; but the Poland variety, as not planting out so well as the other kinds, requires about a bushel more seed to the acre; which, on good soils, and favourable situations, it will amply pay for, by a more abundant produce; equal perhaps to six times the additional seed.

8. The depth is altogether uncertain, as already noticed in treating of wheat and barley.

9. Rolling is but seldom practised, unless when the seeds of clover and ray grass are sown along with this crop; or sometimes with a view to using the scythe for cutting down the crop.

10. The same observations respecting weeding apply to oats, that have been already made with regard to that operation in treating of wheat and barley.

11. The various steps of the harvest process, stacking, thrashing, and dressing for market, do not at all differ from those already mentioned for barley.

12.

12. The produce must differ very materially, according to soil, season, situation, and climate, from seventy bushels, or even a little more, down to twenty bushels or less.

13. The straw is used both as fodder and litter to the various kinds of farm stock; even the farm horses are generally confined to straw till the middle of February, when hay is substituted to enable them to meet the spring labour. This, however, is not a commendable practice, as apt to let down their condition too much, and is accordingly going much out of use. Even wintering cattle, and young beasts, are now almost universally supplied with a moderate allowance of turnips, along with straw; which both forwards their growth and condition, and very much ameliorates the quality and quantity of the muck, or farm-yard manure.

14. The produce of the oat crop is applied to the family and servants of the farm, in various ways to be noticed below. The work horses, of course, use a considerable quantity on every farm. The surplus is sold to corn-dealers, who send a great deal to the London and other markets, and to millers for making oat meal. In old times, large quantities of oats were malted in Scotland, for making oat ale, which is now gone entirely into disuse; but of late considerable quantities were consumed by the Scots distillers, broken down along with unmalted barley, and mashed in conjunction with malt. This was supposed to be useful, in keeping the ground malt and barley open, in the masking process, and enabling it to give out the whole soluble parts to the water employed. Whatever may have been its use to the distiller, this particular market is lost for the

present to our farmers, by the cessation of the grain distillation.

It may be proper to notice the various uses to which oats are applied in Scotland as the food of man. Being first well dried on a kiln, the oats are passed between the millstones, regulated so distant as only to remove the external shell, which is separated from the kernel by a winnowing machine. These shells are almost solely employed as feuel in the kiln, for drying other oats. They are so hard, and indistructible in their nature, as hardly to be susceptible of putrefaction, even when mixed for a very long time with rotten dung; and even on the kiln fire, they consume imperfectly into a black ash, or kind of charcoal in powder.

The oats, after the shells are removed, are named *grits* or *groats*; which were formerly used in broths, but pot barley is now almost universally preferred. These grits are next grinded into a coarse rough meal, a great part of the kernel being only broken into a very coarse powder; but the roundness or fineness of the oat meal varies, according to the custom of the district, or the taste of each particular consumer. This meal is all sifted, to remove a thin pelicle, or inner husk or skin. From these skins, to which some of the farina or fine powder of the kernel adheres, a species of food is made, named *sowins*. It is made by steeping in water, somewhat in the same manner as starch, and resembles furmity.

The chief use of oatmeal is for making *porridge*; a kind of flummery or hasty-pudding. The meal is stirred into boiling water, seasoned by a little salt, till of a proper consistence, and thoroughly boiled. It is afterwards eaten along with milk, and forms a very general breakfast

breakfast for the working people, and young folks, over all Scotland. Formerly, the same dish was a very general supper; but has now given way to the use of potatoes. The Scots highlanders, in travelling with droves of cattle, often content themselves for many days, with oatmeal stirred among cold water, which is called *drammoch*. In the north of England, oatmeal stirred among boiling water, but not afterwards boiled, is a common breakfast under the name of *crowdy*; sometimes seasoned with rinded fat. In Scotland, a common dish is made of oatmeal stirred among the water in which salt beef has been boiled; and sometimes seasoned with the fat skimmed from the pot. This is named *brose*.

Oatmeal is likewise made into a kind of bread, named cakes. It is kneaded up with cold water, or water which has been boiled, and a little salt, and spread out into cakes from about the eighth to the twelfth part of an inch thick; which are fired on the *girdle* and toasted before the fire, as already mentioned with regard to barley bread. But this kind of bread is not very common in Berwickshire.

15. The average prices of oats for many years back will be found in a subsequent part of this report.

SECTION VIII.—PEAS.

1. THIS crop, as formerly mentioned, follows variously in the system of rotation. The land intended

for peas is ploughed after harvest, and again immediately before sowing, or at the time. They are always sown after one spring ploughing, unless when drilled by a drill plough, to be afterwards mentioned; are harrowed in the usual way; never rolled; never put in without a previous ploughing; and scarifying is unknown.

2. Manure is hardly ever given to this crop.

3. Peas are often drilled, by the drill machine already mentioned; or in a more simple, but more tedious manner. A small plough, generally with a mould board on each side, and drawn by one horse, forms the soil into shallow drills, about eleven or twelve inches asunder. A single row drill barrow, on one wheel, driven or pushed by a man, like a common wheel-barrow, follows the drill plough, and sows each drill separately. The seed is partly covered by each successive bout of the drill plough, and effectually covered afterwards by harrowing, which lays all the drills level.

4. It has been already said that dibbling is not hitherto in use in Berwickshire husbandry: though certainly, were hands to be procured for this purpose, the pulse crops are the most favourable for beginning to instruct the people in the art.

5. According to the variety sown, to be mentioned in next paragraph, the season of sowing varies. Cold seed peas are sown at the same season with beans, and often mixed with them, as will be afterwards mentioned; in February if possible. Hot seed, at the same season with oats. The mottled variety, at the same time with barley.

6. There are two varieties ordinarily cultivated in this county, distinguished, like the common oats, into cold and hot seed, both of them gray peas. The former

mer ripens late, and requires to be sown early; the latter ripens considerably earlier, and may be sown as late as the end of April. The cold seed produces vastly more straw or haulm, often growing to six feet long, sometimes even to ten or twelve feet. But it is very uncertain in its produce of grain. The hot seed seldom exceeds three or four feet in length, but hardly fails to give a decent crop of grain, proportional to the vigour of its growth. In wet seasons, both are apt to continue very long growing and blooming: which greatly injures the grain produce.

A third variety has been cultivated of late years, called the mottled pea, and believed to be the partridge pea of Norfolk. This may be sown even late in May; and it ripens generally before any other grain; but its straw or haulm is tender, dry, and without substance; and is not relished by horses. In a few rare instances, small quantities of white peas have been tried in the field; but their success has not reached the knowledge of the reporter, any farther than that their culture has not spread, neither have they been persisted in where tried.

7. The quantity of seed to the acre, is usually from three bushels to four and a half.

8. When drilled by the barrow and drill plough, the seed may be deposited about two inches deep. But in broad cast sowing it is extremely uncertain and variable.

9. No instance of rolling has occurred to the reporter.

10. Podding for market is utterly unknown; as the kinds suited for that purpose are entirely confined to gardens.

11.

11. Drilled peas are most commonly hand hoed; but horse hoeing has not hitherto been employed in this county with any of the crops hitherto mentioned.

12. Weeding, as already repeatedly said, is not at all used in this county. In no situation is it more desirable to introduce that excellent practice, were it practicable, than in crops of peas. In favourable seasons, indeed, this crop, by entirely covering over, and shadowing the ground, completely suffocates all weeds, which grow after the peas have arrived at that stage when they fall over. But a bad crop of peas, is sure to poison the soil with an infinity of weeds, which give great trouble, and produce much injury afterwards.

The reporter had, one year, a most convincing evidence of the difference between a drilled crop of peas carefully hoed, and a broad cast one. A field of seven acres of drilled mottled peas, well hoed, was as clean as a garden bed after harvest, and the crop, both of grain and haulm, was abundant. The headlands had been sown broad cast, and their crop, thinly scattered in a wilderness of weeds, was almost a nullity.

13. The harvest work of peas differs materially from that of wheat, oats, and barley. The bandsters go before the reapers, and twist a number of ropes from the growing peas, which they throw before the reapers. The reapers lay these ropes upon the bare ground behind them, and tear up the crop, with the points of their hooks, usually old ones kept for that purpose, from the former year. The reaped peas are laid in moderate sized bunches, the heads all one way, upon the ropes; and are left in that situation, unbound, for several days to wither. The sheaves are then bound, and are usually allowed to remain on the ground

ground to dry, and repeatedly turned. This is easily accomplished, by a few people walking along the rows, and turning every sheaf with the point of a sickle. When nearly ready for leading home, they are set up in double rows, on their buts, that they may dry thoroughly, and to facilitate forking into the carts. When completely ready, they are carried to the rick-yard, and built into round ricks; sometimes into oblong stacks. And are thrashed, winnowed, and dressed for market, in the manner already noticed for other grain.

14. The produce of peas is exceedingly variable, and more dependant on seasons than that of any other grain. Even on good soils, in some years, the crop may turn out a mere blank, not worth thrashing; while in a favourable year, from thirty to forty bushels may be reaped from each acre.

15. The straw or haulm is applied as fodder for horses, instead of hay; but does not suit riding horses, being apt to hurt their wind. When well harvested, it forms a very hearty provender. In some horses, it is apt to occasion severe cholic pains, called provincially *batts;* for which the most effectual remedy is a good dose of laudanum, about half an ounce, given along with a warm drench.

16. The produce of the crop of peas is chiefly by sale to corn-dealers; though of late years, it has not had a current sale. A small part is used in the family, for mixture among barley meal, for the ordinary kitchen bread. Another small part is paid to the hinds, or married ploughmen, in part of their victual wages.

Peas or bean meal porridge, is an excellent food for breeding calves, along with skimmed milk, after they

they have been fed a few weeks on new milk; by this a farmer may breed up a good many more calves yearly, with the ordinary number of cows, than could be done on milk alone. Oat meal porridge answers equally well; but peas and beans have not, of late years, been nearly so saleable as oats, neither has the price been at all proportional to the quantity of meal which they produce, in proportion to the meal produce and price of oats; and, consequently, peas and beans can be more economically applied to this purpose, and to the feeding of pigs, or horses.

17. No particular use is made of the stubbles, farther than to turn in the live stock, to eat up any remains of haulm, or any fallen pods.

18. The average prices will be found in the section devoted to the fiars of the county.

19. No bread is made of peas meal only in this county; and its use, in conjunction with barley meal, has been already mentioned.

SECTION IX.—BEANS.

1. THE soil best adapted for beans is a rich clay or strong loam.

2. The tillage for beans is nearly the same as already mentioned for peas, in the foregoing section, so far, at least, as the preparation is concerned. 1. It is, or ought

ought to be, ploughed immediately after harvest; and, if to be sown broad cast, or drilled in the common way, the ground ought to get a second ploughing, immediately before sowing. 2. If sown broad cast, the seed is harrowed in immediately, by a diligent use of the harrows, in the usual manner. 3. The reporter has not heard of the roller being applied to the bean crop. 4. There is no instance of this crop being put in without ploughing. 5. It has been repeatedly said that scarifying is unknown.

3. Manure is hardly ever given to the bean crop in this county; though that is frequently done in East Lothian, and is then almost invariably followed by wheat.

4. As drilling is almost universally applied to beans, some more detail may be required in this subdivision. The compound drill machine is hardly ever used for beans, as placing the rows too near. The drilling, or rowing, is performed in two manners. In the one, which a good deal resembles that already mentioned for peas, the lands or ridges are divided into hollow drills, at about twenty-seven inches asunder, either by the common plough, or a double-mould-board plough, in the way that will be particularly described in the section allotted to the turnip husbandry. A drill barrow properly regulated, similar to the one mentioned for sowing peas, runs along each drill, and deposits the seed. The high drills, or ridgelets between the hollow drills, are then split open, which covers in the seed, probably near a foot deep; or, the high drills are harrowed down flat, leaving the seed about five or six inches deep.

Another way of sowing, at the same time with giving the spring ploughing, is as follows. Three ploughs start

start in succession, so regulated as only to make moderately shallow furrows. A single row drill barrow continually follows the third plough, by which a row of beans is sown in every successive third furrow, at about twenty inches asunder; or from that to twenty-seven inches, according to the breadth of each plit, or furrow slice. It is obvious, that this system may be extended upon large farms, so that each third plough, of any number divisible by three, shall have a drill barrow in its rear.

5. Dibbling is not at all in use; but, if practicable, might be very properly applied to this crop.

6. The time of sowing is as early as possible after the severity of winter is over; in February if possible, but not later than the end of March; as otherwise the ripening may be very precarious in this county.

7. The large horse bean is the species or variety usually cultivated; sometimes the tick bean, procured from London, but this has seldom produced good crops. Upon the whole, the cultivation of beans seems rather on the decline; partly from the uncertainty of its produce, and the difficulty often experienced in getting the ground, after its late harvest, prepared for wheat; and greatly owing to its want of currency, or ready sale.

8. When sown broad cast, six bushels are generally allowed to the acre; but, in drills, four bushels may suffice. Either in broad cast or drill husbandry, it is very common to mix a small quantity of the cold seed pea, already mentioned, about a twelfth part, or less, along with the beans. This mixture is called beans with a dropping pea; and gives very material aid in harvest, as the peas serve to bind the beans; and it, besides,

besides, considerably improves the quantity and quality of the fodder.

9. When sown broad cast, as in all other grain, the depth at which beans are deposited in the soil, by the operation of harrowing, must be quite various and uncertain. In one way of drilling, already mentioned in this section, the seed is said to be nearly twelve inches deep, § 4. But in the subsequent operation of harrowing, § 11, this enormous depth becomes reduced to five or six inches, by the high ridgelets being harrowed into the hollow interspaces. When drilled, following the common plough, or under furrow, already noticed, the seed is deposited from three to four inches deep. Upon the whole, it is believed that the precise depth at which any kind of seed of grain is deposited under the surface, is of no material importance; except so far as protecting the seed against the depredations of birds. Experience sufficiently shows every day, that the seeds, of all our usually cultivated grains, vegetate freely, when only laid upon the surface of moist earth, and strike effectual root into the ground. It is, however, of material importance, that they be not buried too deep; so as either to place them beyond the vivifying influence of the sun and air altogether, or so deep as to materially interrupt their germination, and thereby to delay their maturity and harvest.

10. No instance of the application of the roller to the bean crop, has occurred to the reporter; indeed, the soil upon which beans are usually grown, seems rather adverse to the employment of rolling.

11. Harrowing is variously applied. When broad cast, the harrow of course covers in the seed, and is generally

generally used afterwards, just as the beans are about to make their appearance, on purpose to destroy any annual weeds that may then have sprung up. The same use of the harrow is applied when sown under furrow. When sown in the hollow drills, and the soil heaped over the seed, the harrows are used, either immediately, or soon afterwards, to lay the soil level, and to reduce the great thickness over the seed, and is again employed just before the seedling plants appear.

12. Drilled beans are always horse-hoed; generally by means of the horse-hoe mentioned in Ch. v. sect. v. But the particular use of this, as alternating with the hand-hoe, will be mentioned in next paragraph.

13. After the beans have acquired some growth, sooner or later, according as the ground is free or encumbered with weeds, the intervals of the drills are gone over with the horse-hoe; and the hand-hoe follows immediately afterwards, to cut up such weeds as are beyond the reach of the horse-hoe. And these operations are repeated successively, so long as the growth of weeds seem to require them, or until the beans become too long and spreading to admit of them without injury, generally finishing off with the horse-hoe.

Before the introduction of this implement, a common small plough, with one mould board, and drawn by one horse, was employed for working the soil between the rows of beans: going one bout, or up and down, in each interval, it gathered the soil from the beans into the middle; after which the hand-hoes were employed to cut the weeds close to the rows. A second hand-hoeing followed, at some little distance

of

of time, to destroy a fresh growth of weeds, close to the rows; and, sometime afterwards, a small double mould board plough, drawn likewise by one horse, split open the gathered soil between the rows, and laid it on each side to the roots of the beans.

14. It has already been said repeatedly, that hand-weeding is not practised in Berwickshire husbandry.

15. Except the collier, no distemper occurs among beans; and as no cure or prevention has been attempted in this county, it does not seem necessary to give any particular description in this report.

16. No instances have occurred to the reporter of cutting beans very green in this county; but the general custom is to cut them before they become fully ripe, as in this latter condition the outer skin of the beans becomes dark coloured, almost black. After the eye of the bean is thoroughly blackened, and the skin acquires a whitish, leather-like appearance, is considered as the best state for cutting.

17. The harvest process differs according as the beans may have been sown entirely by themselves, or as mixed with what has already been called a dropping pea. In the former case, a supply of short straw ropes are provided for tying up the sheaves. In the latter, the bandsters twist ropes from the peas that grow among the beans, and throw them to the reapers. In both cases, the reaped beans are left for several days unbound, provincially called *broad-band*, to wither. They are then bound into sheaves, and set upon their buts in double rows to dry or win.

As beans are often very long of drying, or *winning*, sufficiently to admit the stacking safely, the practice recommended by Mr Curwen, of leading them from

the place of their growth, immediately after they are bound, and setting them up to dry in another field, seems admirably calculated for allowing the field on which they grew to be laboured and sown with wheat, in due season; which is often impracticable, after late bad harvests, when the beans are left to dry upon their own stubbles.

When sufficiently dried, they are led home to the rick yard, and usually built up in round ricks, in the manner already indicated respecting wheat. Sometimes, however, they are built in oblong stacks, having interruptions without spaces, dividing them into portions of convenient size for being thrashed at one time. The tops of these long stacks are drawn up to a ridge, like that of a house; and the whole is thatched with straw, held on by straw ropes. These long stacks are provincially called *sows*, and the separate divisions are termed *leets*. In the rick-yard, wheat straw is universally preferred for thatch, and oat straw for ropes, where a choice can be made; and many farmers preserve a quantity of wheat straw from the former years crop for this purpose.

Beans are thrashed by the mill, like any other grain; and are dressed by the fanners and other barn implements, as already mentioned. But in riddling them, all the light beans, and broken shells, are carefully skimmed off by hand.

18. No crop whatever is more uncertain in produce, or so dependant upon seasons, as that of beans and peas. A good crop of beans, on fit soil, and in favourable seasons, may exceed forty-two bushels the acre; but from twenty-four to thirt bushels is reckoned a very satisfactory produce. In an unfavourable season, and even

on very good soils, the crop turns often out a mere blank, and not worth thrashing, except to clean the straw from soil and mouldiness, before using it as fodder.

19. The straw is given to the work horses of the farm, in the same way as peas haulm; and, when well got, is reckoned very hearty feeding.

20. The produce is partly applied in payment of the farm servants, for mixing with barley, in making their ordinary household bread; partly in feeding the farm horses, mixed with their oats, either whole or broken. Sometimes bean meal is employed in carrying on fattening cattle, between the close of turnips and the commencement of pasture. On these occasions great care must be taken that each beast eats its own portion and no more; as a master ox will often devour the quantity intended for all his neighbours in the same yard, and may die of the surfeit.

No bread is made of bean meal alone; but, like peas, it enters in small proportion into the ordinary household barley bread. The use of bean meal, in rearing calves, has been already mentioned in sect. viii. § 16. of this chapter.

The surplus produce is sold to corn-dealers or millers, or to other farmers, for payment of their servants, for horse corn, or for seed.

21. The stubbles are applied to no particular use, except that the live stock of the farm, cattle, and horses, are allowed to pick up what they can get; which is very little upon land that has been under clean tillage, and well harvested; more especially as the gleaners very industriously gather all dropt pods, and even pick up the single beans.

22. The average prices will be found in the article allotted to the fiars of the county.

23. The use of beans, as food for man and the live stock and horses of the farm, has been already mentioned in the section devoted to the application of produce, and need not be repeated in this place.

SECTION X.—TARES.

1. SPRING tares are cultivated, upon every well managed farm, in small quantities, for soiling the work horses, or at least for their harvest food, during their then almost incessant labour.

2. When cultivated for seed, the management is in every respect so very similar to that of peas, that any detail would be a mere repetition of that section. It may, however, be mentioned, that a small quantity of beans is sometimes mixed on this occasion, to carry the tares from the ground, like sticks to garden peas. The produce of the beans is easily separable in the barn, by proper riddles, that allow the tares to pass, and keep back the beans.

3. The cultivation of tares for hay is utterly unknown in this county; at least no instance has reached the knowledge of the reporter.

4. When grown for soiling, it is common to mix a small quantity of oats with the seed, as a sixth or eighth

eighth part. By this the tares are supported while growing, and stand better to the scythe; the fodder or stover is considerably increased; and, in harvest, this mixed food becomes amazingly substantial, in consequence of the ripe oats and tares. After the seed is harrowed in, the land is gone over by the heavy roller, which greatly facilitates the after use of the scythe.

Tares are mown as wanted, mostly during the interval between the two cuttings of the clover crop, usually for a month or six weeks after the middle of June or beginning of July. A part of the crop is reserved for cutting at the end of harvest, to feed the work horses when leading home the crop. For this latter purpose, it is common to sow that portion of the tare crop three or four weeks latter than what is intended for filling the interval between the two cuttings of clover.

Besides the employment of tares to the horses, as already mentioned, they are given occasionally to the few pigs that are kept on most farms.

No direct experiments have been instituted in Berwickshire, so far as has come to the knowledge of the reporter, from which the advantages attending the practice of *soiling* in general, or the value of tares by the acre, or the quantity of muck raised by soiling, can be reduced to estimate. It is generally allowed, however, that soiling is singularly advantageous. By it the same quantity of stock can be fed from a greatly less extent of land, than by pasture. A large quantity of excellent disposible muck is produced, at a season when none at all can be had without that practice; and which muck, produced by the same stock on pasture, would be scattered over the grass land; much of it wasted by

evaporation and much of it carried away by insects. Besides, that the pasturage of horses is apt to injure sheep stock going on the same land.

This soiling process, however, is chiefly due to the clover crop; and the tares only serve the highly useful purpose of continuation between the two cuttings of that crop.

The value of an acre of tares may probably be equal to that of an acre of clover; and may average from six to eight guineas, according to the soil and seasons.

In summer 1806, the reporter kept six work horses and a riding poney in the fold yard upon cut clover and tares, for four months; and having fortunately preserved the memorandum of the extent of ground cut for this purpose, has it in his power to give something like an estimate of the advantage. Two acres of first crop of clover were expended, and half an acre of tares before the clover would cut a second time. These, at seven guineas an acre, is L.18. 7s. 6d. It required 12 acres of second crop clover at 30s. L.18. to carry on the horses.

The expence of cutting and leading may certainly be considered as fully compensated by the value of the muck produced; so that the whole expence of feeding seven horses during four months amounted to L.36. 7s. 6d. These would certainly have required six acres of the clover in pasture, consuming both crops, and estimating these at the same value with the two cuttings L.8. 17s. an acre, the horses would have cost for the same period at pasture L.61. 19s. leaving a fair profit of L.25. 11s. 6d. in favour of soiling; or L.3. 13s. for each horse. Could the same plan be extended on the same farm, to its cows and young cattle, the profit upon

on the whole would f very little short of a hundred pounds a year, upon a hundred and thir acres. But soiling to that extent would require more accommodations than the farm possesses, and would too much interfere with the hay crop, which cannot be wanted for winter use.

As tares are always closely mown, the stubbles are of no appreciable value.

5. So far as the reporter can learn, the tare crop is never applied to feeding in this county; if by that is meant pasturing, or e ing the crop on the ground, in contradistinction to soiling.

6. Attem s have been made to grow winter tares in this county, by way of experiment; but with such bad success as not to encourage perseverance. It has been suggested by a respectable person, that it might be adviseable to sow winter tares in early spring: But there seems no reason to expect any advantage from this practice, as the spring tares are sown as early as is practicable, and are probably of quicker growth than winter tares sown at the same season. The great benefit to be expected from winter tares, is the possession of succulent herbage, or green fodder, before the grass season; which this proposed scheme could never accomplish. Besides, in Berwickshire, ewes and lambs, and feeding sheep, are carried on to the season of grass, by means of turnips and ruta-baga; by which the absence of winter tares is the less to be regretted.

SECTION XI.—LENTILS.

No crop is cultivated in Berwickshire under the denomination of Lentils. It has, however, been suggested to the reporter that this crop might be worth trying in this county: He has, therefore, inserted the following abstract, or short hints, respecting its cultivation, which were communicated to him from a quarter to be depended upon.

1. They thrive best upon a dry light soil, similar to that adapted for turnips; and they are said to ameliorate the soil, probably leaving it in a mellow state, as is the case after all pulse crops.

2. They are said to be of a *milder* nature than tares; having a finer straw or haulm, which makes a more pleasant food for all kinds of stock.

3. They are cultivated in immediate succession to any kind of grain crop, which has left the land clean.

4. After once ploughing, they are sown in April, at the rate of two bushels the acre, and are harrowed in.

5. Lentils are applied to all kinds of stock; as sheep, milking cows, feeding beasts, or work horses, in small quantities at a time, either on the ground where they grow, or cut and led off.

6. An acre of lentils is valued at from seven to eleven pounds.

7.

7. When harvested for seed, their produce is estimated at from three to four quarters the acre, and the price of the seed is averaged at seven shillings the bushel; hence may be worth near ten pounds.

There was formerly grown in Scotland, a species of vetch tare or lentil, of considerable size, called provincially the *mouse pea*, but which is hardly ever to be met with now. This has sometimes been suggested, as a probably good substitute for tares; but not having been able to procure any particulars respecting this crop, it is only here incidentally mentioned, as a hint for future enquiry.

SECTION XII.—BUCK-WHEAT.

Two small experimental trials of buck-wheat, in this county, one of them broad cast, and the other drilled, so completely failed as not to repay the seed, and were not, therefore, thought worth being repeated.

SECTION XIII.—TURNIPS.

THIS invaluable crop is so completely the sheet anchor, or *sine qua non*, of modern husbandry, in all dry-soiled districts, as to induce the reporter to enter into considerable detail in this section, which is appropriated to an account of the mode of its cultivation in this county.

In the *addendum* to the original report of Northumberland, the introduction of *drilled* turnips is referred to the celebrated Tull, who seems to have inserted the muck into the intervals between the rows of turnips. Tull appears to have chiefly used intervals of three feet; which he alleged to have uniformly produced better crops than our modern narrower intervals of 27 to 30 inches; and he adds, that *six* feet intervals, without muck, produced much better crops, than *three* feet intervals double dunged. It farther appears, that Tull gave all or most of his favourite horse-hoeing husbandry to his turnips, *after* they were sown; whereas, in the modern turnip husbandry, the soil is invariably reduced to a fine friable tilth, before the turnips are sown, and the horse-hoeing continued during the period of their growth.

The Northumberland reporter considers Mr Craik of Arbigland in Dumfries-shire, as having been the first

first cultivator of drilled turnips, on the borders, about the year 1745. He farther supposes this practice to have reached Cumberland about ten years afterwards; when Philip Howard, Esq; of Corsby first cultivated turnips, at intervals of four feet, which he afterwards reduced to two feet in width. In other ten years, or about the year 1765, Mr Howard began to be imitated by the Cumberland farmers.

Nearly at the sametime with Mr Howard, or about the year 1755, Mr Pringle, near Coldstream in Berwickshire, cultivated turnips in drills, at three feet and a half distance, and likewise drilled his grain crops; following, in both cases, the general principles of Tulls publication.

The late William Dawson, Esq; of Gradden, long a most active, intelligent, and successful farmer at Frogden in Roxburghshire, after a long residence in the county of Norfolk, where he attentively studied the system of alternate husbandry, adopted the practice of Mr Pringle, in regard to the cultivation of turnips, in preference to the mode which he had seen cultivated in that celebrated county, the cradle and example of modern improved husbandry. Mr Dawson began the drilled turnip husbandry in 1764, on an extensive scale, growing nearly an hundred acres yearly, from the first. He ultimately settled at thirty inches, as the best interval for the purpose, after repeated trials, both of broader and narrower; and he has been universally followed in the border counties of Northumberland, Roxburghshire, and Berwickshire, ever since.

" Upon the whole, concludes the Northumberland reporter, it appears that the present mode of cultivating turnips, by drilling in rows, at two feet, and two

and

and a half feet distance, had occurred to different people, in different parts; who all, at first, began according to Tulls directions, with the alteration of putting dung in the bottoms of the ridgelets or drills; and, after trying various widths, or intervals, found that the best, and most convenient distance was from twenty-four to thirty inches. But it is very clear, that Mr Tull is the root from whence this excellent practice originated."

After this introduction, respecting the history of the introduction of drilled turnips into the border counties, we now proceed to an account of the present mode of their cultivation in Berwickshire, conformable to the new plan for the reprinted reports.

1. The succession of turnips has been already mentioned, in the general account of the course of crops usually followed in this county. They are grown upon all comparatively dry soils, from the poorest sand and gravel, up to the richest free loam; but are exceedingly apt to fail, on soils that have a tendency towards clay, or where the subsoil is at all retentive of moisture, more especially in wet seasons: Yet they are every year seen, in greater or less breadths, upon soils no way adapted for their growth; so great is the anxiety of every one to have a supply of that almost invaluable succulent winter food for farm stock of all kinds.

2. The land intended for turnips is, or ought to be, unvariably ploughed after harvest, as soon as convenient, and is, or should be, most carefully water furrowed, to lay it completely dry, if it has the smallest tendency to retain wetness. This water furrow, as it is called, is of very material importance, for facilitating the

the future tillage, by giving a mellowness and freedom from tenacity, to the soil, which would hardly be supplied by three ploughings in the ensuing spring. As early as possible in spring, it is ploughed across. When spring seed work is over, the whole strength and energy of the farm is exerted to the utmost, to reduce the turnip break into fine tilth, by repeated ploughings, harrowings, and rollings; and the roots of vivacious weeds, more especially of couch grass, called here *quickens*, are carefully gathered into heaps, and either burnt on the ground, or carted off for bedding the fold-yards, or for making into composts, which is vastly preferable to burning.

3. Upon very rich soil, which has only grown one crop of grain, after being taking up from old pasture lay, turnips are frequently sown without any manure; but very generally throughout the county, the turnip break is manured with farm-yard manure, or lime, sometimes both. Some farmers muck the whole, or a part of the land intended for turnips, immediately after harvest, before giving it the winter furrow, or first ploughing. This saves a great deal of time and labour, in the excessive hurry of the turnip season; and answers tolerably well upon good land that is entirely free from root weeds. But the most generally approved method of applying the muck, is in the drills, immediately before sowing, as shall be explained in the fifth subdivision of the section.

4. The time of sowing must be regulated by circumstances; but as nearly as possible to the beginning of June, is considered as the most favourable for ensuring a full crop. When sown much earlier, even a fortnight, they are very apt to run up their flowring stems

stems before winter, to the great injury of the feeding quality of the root. When much later, they have scarcely time enough remaining, before winter sets in, to form their roots to a full crop. The third, or rather the fourth week of May, is the usual time of beginning to sow; and every exertion is made to have the whole finished by the middle of June.

5. Drilling of turnips is so very general over all this county, that hardly ever is any to be seen broad-cast; and the drills or rows are universally at from twenty-seven to thirty inches distant.

When the soil is ready, that is, quite clean from root weeds, and finely reduced, it is formed into straight lined ridgelets of the proper breadth, either by a double mould board plough, or by the common swing plough. The muck is then carted on, and drawn out in small heaps, in every third furrow or hollow drill, the cart wheels going in the two hollow drills of each side. The muck is then regularly spread out in these three hollow drills, which must all be supplied from one row of heaps; where a large breadth is grown, in proportion to the farm manure, one row of heaps is sometimes made to supply five drills. The quantity of muck varies, according to the powers of the farm, and the means of procuring adventitious manure from towns, or from the sea-shore, from twelve to thirty loads of a two horse cart; and the muck is always carefully rotted before using, by turning over in the fold-yards, sometime previous to use, or by carting out during winter into heaps, near the place where it is to be applied.

It must be noticed, however, that sea-weed is always applied to the land in a perfectly fresh state, immediately as it comes from the shore, and is never rotted,

at

at least by itself; the reason of this will be mentioned hereafter, in Ch. xiii. sect. iv. § 5. As the times of procuring sea-weed are extremely uncertain, all that is procured in winter and early spring, and is intended for the turnip break, is led directly, and immediately spread upon the surface, no attention being paid to it afterwards. Any that is procured at the time of forming the hollow drills, is carted upon them, and managed exactly in the same manner as muck.

Immediately after the muck has been spread out in the hollow drills, the ridgelets are split open to cover in the muck; and the seed is instantly sown, to preserve the natural moisture of the soil as much as possible, that the seed may spring quickly and equally. Under the division of implements, Ch. v. sect. iv. the double turnip drill-machine, most commonly used, has been already noticed. Single row drill-barrows are still to be seen every where.

It ought to have been mentioned previously, that, when the land intended for turnips is to be limed, the lime is usually laid on immediately before forming the drills, and spread equally over the surface.

As the land for the grain crop which follows turnips, whether barley, oats, or wheat, never gets more than one ploughing, it is customary to lay off the turnip drills, in a direction somewhat different from that in which the ridges are to be afterwards drawn for the grain crop. By this a more equable distribution of the manure is made through the soil for nourishing the ensuing crops of grain and grass.

Upon strong clay soils, or land much subject to retain wet, in consequence of retentive subsoils, turnips may be sown in drills, exactly according to the plan already

already described, but at right angles, or directly across gathered lands, or ridges of the ordinary breadth. In this case, great attention must be given to open up all the water furrows between the ridges, after the whole culture of the turnips is finished. This is by no means meant as recommending the cultivation of turnips upon such soils; but merely as pointing out a way in which turnips may be cultivated on such soils, with the least possible injury to the succeeding crops.

6. The sorts generally cultivated are the white topped Norfolk and the Globe. Sometimes the seed procured from England has a mixture of green or red topped among the white. Several persons in the county, and on the south side of Tweed, are at great pains to raise seed of excellent selected varieties, mostly, however, white globe, for sale; to which some men have chosen to give peculiar names of their own contrivance. The tankard variety is sometimes cultivated for early use; but is believed not to bear the vicissitudes of winter equal to the others already mentioned. A new variety, called the yellow field turnip, has of late been recommended in other districts, as peculiarly well calculated to stand the winter, and to serve for late spring seed, when the white is over; but having no accounts of its success in Berwickshire, it would not be proper to give any opinion upon mere hearsay.

7. Different drill-machines are rather uncertain in the quantity of seed which they give out; but, from a pound and a half to two pounds and a half to the acre, is reckoned quite sufficient to ensure a full stock of plants, and not to render these too thick in the rows. The want of a sufficient quantity of seed might occasion unprofitable blanks; while the too great abundance occasions

casions the plants to be weakly, and very difficult to single out in hoeing.

8. Rolling is applied at the moment of sowing, in consequence of the construction of the drill-machine formerly mentioned.

9. The reporter knows of no instance of the harrows being applied to the turnip crop.

10. In the early stages of their growth, turnips are said often to suffer very materially, in some districts, by the ravages of a peculiar species of fly; but, during fifteen years experience in Berwickshire, the reporter has neither seen nor heard of this misfortune, except in a very few rare instances, in which partial failures have been attributed to the fly. This is peculiarly fortunate, as when eaten up by the fly, a second sowing becomes necessary, which in this climate would very seldom produce a crop of much value. Upon the most industrious inquiries, among a great number of experienced farmers, no certain account can be procured of the causes of this comparative exemption from the ravages of the fly. One idea has been suggested, that thick sowing is a tolerably sure prevention of injury from the turnip fly, as giving a sufficient number of plants to serve the voracious appetites of these insects, and to leave abundance of plants for a crop. This was the opinion of a Norfolk ploughman employed by Dr Hutton, and afterwards by Mr Fordyce, so long ago as from 1763 to 1772. It may be noticed, that to the example of this ploughman from the county of Norfolk, the modern Berwickshire husbandry, particularly as relative to clean turnip fallows, neat ploughing, and the introduction of cultivated grasses sown upon rich infield land, very greatly owes its origin.

In summer 1804, a great alarm prevailed for some weeks, on both sides of the Tweed, from the appearance of immense numbers of small black, or very dark green caterpillars, upon detached small patches of the turnip fields. Their ravages were rapid beyond conception; but they fortunately did not spread, and suddenly disappeared, after doing very moderate mischief. A few of the same kind has appeared in different parts of the country, every year since, but have never produced any serious injury. The fly is said to attack turnips while in the seed leaf only; whereas the caterpillar fed voraciously on the broad rough leaf, even after the plants had been singled out. In some instances, the hearts or crowns of the plants escaped, and afterwards vegetated, but the roots of these plants never became large.

11. As soon as the plants have acquired sufficient strength to admit of being singled out, the intervals are horse-hoed. The outworkers of the farm, or hoers, then fall to work with hand-hoes, setting out the plants singly in the rows, at distances of eight to ten inches from each other, destroying all weeds, and unnecessary turnip plants, in the rows, and on each side beyond the influence of the horse-hoe. After sometime, when a fresh growth of annuals has sprung up, the horse-hoe again clears the intervals, and a second hand-hoeing immediately follows. This generally suffices, as the broad leaves of the turnip plants now overshadow the soil, and effectually prevent all vegetation except their own. A third course of both kinds of hoe may sometimes be necessary; but, at all events, the whole is finished off by the horse-hoe.

Before

Before the introduction of the horse-hoe, the soil was first taken away from the rows of turnips, and gathered into the middle of the interval, by one bout of a small plough, drawn by one horse, as in the culture of beans already mentioned; and the whole was finished off, after repeated hand-hoeings, by splitting open the gathered soil with a small double mould board plough. This, however, is very seldom now done, unless the land is subject to wetness; because sheep are apt to turn on their backs in these hollows, and being unable to rise, very soon die, unless immediately assisted.

12. In consuming the turnip crop, part is taken up during winter, or drawn, for feeding cattle in the house or under shelter shades, and for giving a moderate allowance to young cattle and cows. The remainder, and usually the larger proportion, is applied to feed sheep, either where they grow, or led off into grass fields. It is very common to lead off one half of the turnips, in regular breadths of five or six drills, for the several purposes already mentioned, leaving the other half to be consumed by sheep where they grow.

When fed by sheep, in the place of their growth, the turnips are lotted off by means of flakes, gates, or hurdles, or by sheep nets fastened to stakes, that they may be regularly consumed, as all that are bitten soon spoil. When the first allowance is nearly eaten up, the bottoms or shells are picked out of the ground, by means of a two pronged blunt hook adapted for the purpose, that no part may be lost. An additional portion of the field is then given, by shifting the hurdles or nets, and the whole field is thus regularly gone

over; always leaving the cleared part of the field open, for the sheep to chuse themselves a dry bed.

In the expenditure of turnips to young cattle, especially rearing calves, and to hogs or young sheep in the first year of their age, especially towards spring, when the loosening and coming out of their teeth render them unable to bite the firm hard roots, it is customary to cut or slice the turnips, either by means of a spade or chopping knife, or by an implement constructed for the purpose, called a turnip-cutter; or they are sometimes bruized by means of a heavy wooden mallet.

During excessively severe frosts, the turnips sometimes become so extremely hard frozen, that no animal is able to bite them. The best remedy for this, is to lay the turnips for sometime in running water, which effectually thaws them; or, in close feeding homes, the turnips intended for next days use may be stored up over night in one end of the building; and the warmth from the animals will have thawed them sufficiently before morning.

It is difficult to estimate the expence of hurdling; because every farmer who has occasion for that accommodation, has a complete set of hurdles, or nets, or both, to serve his purpose; and these, with proper care, will last a long time. Two hundred sheep flakes or hurdles, made somewhat like gates, of foreign fir, having three rails each, with the pins, stobs, and rances, for securing them, may cost about fifty pounds, and will last from twelve to twenty years, with proper care, and moderate repairs. A set of sheep nets, which answer admirably for the large quiet Leicester sheep, sufficient for the use of a moderate farm, may be had for a third part of that price; but they will hardly last

last beyond four or five years. They are, however, much more readily transported; and sheep breeders and feeders, have often to take turnips at many miles distant from the places of their abode.

The effect of eating the turnips on the place of their growth by sheep, in manuring the ground, and enabling it to grow weighty crops of grain, is very material, and obvious to the daily experience of every farmer; but no direct experiments have been instituted with a view to ascertain the comparative values of the grain and grass crops which succeed turnips eaten upon the ground, or after turnips that have been drawn and eaten elsewhere. The difference, however, may be stated generally, that in the former case, the land will carry a moderately good crop of spring wheat, while in the latter, the farmer must be contented with a crop of barley or of oats. If however, the turnip crop is to be carried entirely away from the farm, the difference is of very material importance, as carrying away a complete dressing of muck, and equal to not less than five pounds an acre; which sum, therefore, may be assumed as the value of the meliorations produced by eating the turnips where they grow. But then that sum is by no means lost to the farm, though abstracted from that particular field, when the turnips are eaten in the fold-yard, feeding houses, or upon other fields of the farm.

13. It is difficult to estimate the produce of a turnip crop, as it is hardly ever weighed. Near large towns, where turnips have been occasionally sold by weight to the inhabitants, for feeding cows, 60 tons to the acre, has been mentioned as a good crop; but no information on this particular subject has been procured in Ber-

wickshire, and the produce just mentioned, was probably derived from a Scots acre; if so, the proportional produce from an English acre may be stated at forty-eight tons.

The value or price by the acre, is so very various, from differences in soil and seasons, and fluctuates so much according to abundance and demand, that nothing decisive can be assserted on this subject. It likewise varies according to the modes of application, as above mentioned. A farmer who has turnips to sell, will demand more money per acre, if they are to be drawn and consumed by the taker in the fold-yard, or on the pastures of the farm, than if eaten by sheep where they grow; and will require a much higher price if they are to be led away from the farm. Indeed, hardly any price will compensate for such abstraction of manure, and consequent loss of future fertility, unless where manure can be readily purchased to supply the defalcation; and that can only be done by those who are situated near towns and large villages, where a few turnips may be sold in that way, for the cows of the inhabitants. Eight or ten guineas an acre, is considered a good price, in seasons of uncommon demand, for a good crop; five or six guineas, in ordinary years, and down to thirty and forty shillings for inferior crops. Upon an average of years, five guineas may be reckoned a fair price for a good crop on good land, to be eaten by sheep where they grow.

From what has been said, it will appear obvious, that the turnip crop, considered singly, is by no means a source of direct profit to the grower; when rent, manure, and extraordinarily expensive labour, are all taken

taken into consideration, double the price already mentioned as a fair average, would not compensate the outlay, and leave a fair profit to the grower. But, when its beneficial consequences are taken into view; as standing in place of a naked unproductive fallow; as producing an abundant supply of excellent succulent food for winter and spring use, to sheep and cattle; as securing subsequent fertility, and augmenting the means of producing heavy crops of grain and hay, and excellent pasture; the turnip culture must be considered as the main-stay of all good husbandry, on soils to which it is adapted.

It is not uncommon to let turnips at an agreed price, or board, for each sheep or beast weekly. This varies, according to age and size and demand, from fourpence or less, to eightpence, or more, for each sheep weekly; and from two shillings to five for each beast. An acre of good turnips is supposed equivalent to the full keep of a moderate sized fattening ox, with the help of straw, during twenty weeks, or for ten Leicester full aged sheep for the same period. Supposing the turnips worth six guineas, this would bring the weekly keep of the ox to six shillings and threepence halfpenny, and of the sheep to about sevenpence halfpenny a week. In this way of letting, however, disputes may arise, as the taker may not be careful to have them eaten up clean.

The person who lets the turnips, has to maintain a herd for the taker; and when let for cattle, and consequently, to be led off, the taker finds a man and horse, and the letter maintains both. The taker has to provide hurdles or nets for fencing the allotments; but the letter must fence his own hedges, if necessary.

The period at which the taker is to consume the whole, is usually fixed in the agreement, that the letter may be enabled to plough and sow his land in proper season.

14. Turnips are very seldom secured, though sometimes a portion is drawn and formed into heaps, like potatoe camps, to be described afterwards, and lightly covered with straw; or are preserved for sometime under a roof or shade. On these occasions, the shaws or leaves, and the tap-roots, must be cut off and removed, before storing up, to prevent heating and rotting.

It has been asserted, that turnips ought on no account to be preserved in heaps, on the ground, in the manner of keeping potatoes, to be afterwards explained; but that they should always be stacked, like corn, on stands, or staddles, and covered with straw; and in this way, it is said they will keep for several months. It is, however, a common practice in this county, to keep them in small heaps on the ground, first depriving them of their shaws, or leaves, and roots, and then lightly covering them over with straw, or old thatch.

15. When turnips are cultivated for seed, it is usual to transplant a part of the crop, sometime in the month of February; as experience shows, that when repeatedly allowed to run up to seed, without transplantation, they are very apt to degenerate. Those who make this a kind of business by itself, or connected with the profession of a public gardener and seedsman, select a quantity of the best formed roots yearly, which they transplant into a piece of well manured soil, in fine tilth. They are there placed in regular rows, by hand, in hollow drills, previously made by the plough, in the manner already described, and the intermediate ridge-

lets

lets are split open to cover the roots, leaving the crowns bare. No particular culture is given, except keeping the ground free from weeds, by means of the hoe. When the pods fill, and the seed begins to harden, they must be carefully watched, to prevent the depredations of small birds; and they ought to be cut before the seed is completely ripe, as in that state, the pods are extremely apt to split open in handling, and to spill the seed. When the stems are sufficiently dried, the crop may be secured in ordinary ricks, carefully thatched like corn stacks, and thrashed out in spring.

The produce of this transplanted crop, is sown in the next succeeding year, and is not transplanted. The seed of this second crop is saved for sale, and is then sold under the name of transplanted turnip seed. Thus, having two breaks of seed turnips, the cultivator may always keep up a stock of excellent seed; and every farmer may, if he chuses to take the trouble, perform this operation for himself. But the seed is so cheap to the acre, as hardly to be worth the necessary pains and attention, except to those who do it for sale to some extent; or as a decent source of profit to villagers, or professed seedsmen. One acre of ground may produce to the value of fifty pounds, but any considerable extension of the culture would soon greatly overstock the market.

In the year 1797, Mr Alexander Low, the original reporter of this county, drew up an account of the then Berwickshire mode of turnip culture, with great clearness and ability, designed for the use of the late Duke of Bedford, a nobleman most deservedly dear to husbandry. The propriety of republishing that essay, for

it

it was then printed, and appending it to the present report, has been suggested from a most respectable quarter. But, as in this section, the present practice of Berwickshire, in regard to the culture of turnips, and the former mode, as detailed by Mr Low, have been explained at considerable length, and it is hoped with sufficient clearness, it does not seem at all necessary to swell this report with what might be considered, in a great measure, needless repetition. In the accompanying plate, an attempt has been made to delineate the various steps of the turnip culture, as already detailed in this section; by which it is hoped, that any person, even moderately conversant in agriculture, may be able easily to adopt the Berwickshire mode.

Explanation of the Plate.

Fig. 1. Is a section of the drills, as first formed, and having the muck, or dung, spread out in the hollow drills.

Fig. 2. Represents these drills, as split open, to cover the muck; what was formerly the hollow drills being converted, by this operation, into the ridgelets, and *vica versa*.

Fig. 3. Gives an idea of the figure of the drills, or ridgelets, after having been rolled by the drill machine at the time of sowing the seed.

Fig. 4. Is a representation of the appearance of the field, after the earth has been gathered into the intervals between the turnip drills, as formerly practised, but which has now given way to the use of the horse-hoe.

Fig.

Fig 1.

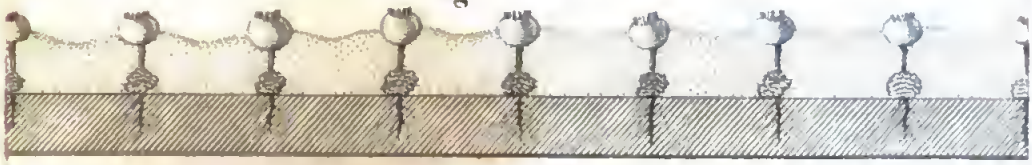
Fig 2.

Fig 3

Fig 4.

Fig 5.

Fig 6



Scale of the Upper Figures 0 1 2 3 4 5 6 *Feet*

Fig. 7 The Scale one Quarter of the Upper Figures.

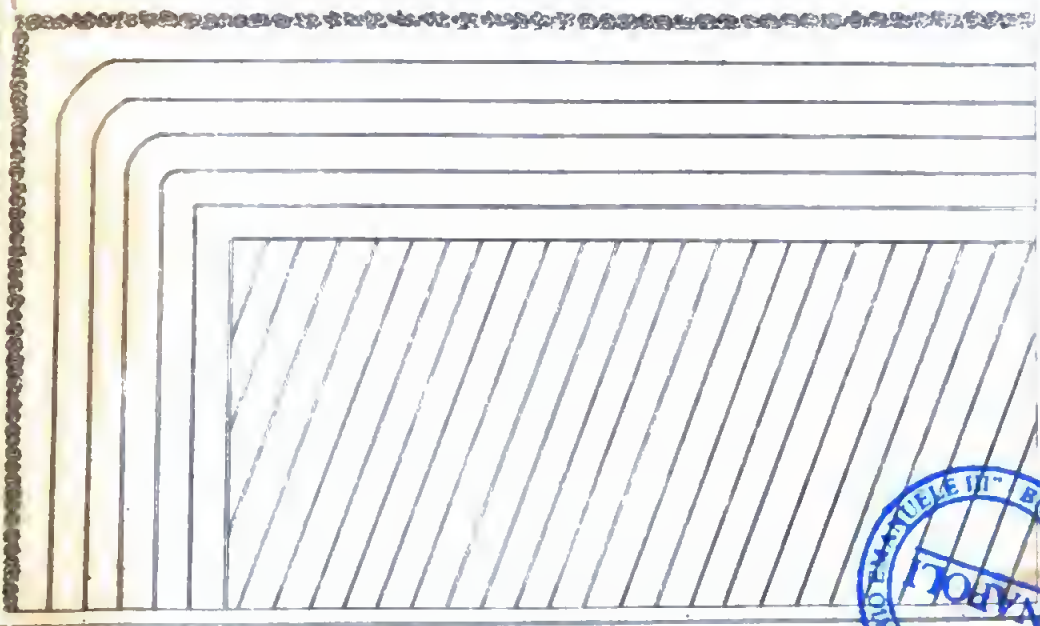


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Fig. 5. Shews the situation of the drills, on finishing off the field, in the older method, by splitting open the gathered ridgelets of fig. 4. but which practice is not now generally followed, for reasons assigned in the body of this section.

Fig. 6. Gives an idea of the situation of a field of drilled turnips, as now generally finished off; the furrows, or hollow drills, not being opened out, for the reasons before assigned, as having the shaws or tops of the plants, removed for the use of young stock, previously to the feeding flock being laid on.

Fig. 7. Gives a plan upon a smaller scale than the preceding sections, of a turnip field in regular drills, in which the drills are laid off obliquely to the usual direction of the ridges, to facilitate the more equable distribution of the muck, covered up in the drills, when afterwards ploughed for a grain crop.

SECTION XIV.—COLE-SEED, OR RAPE.

Rape has been grown, for sheep food, upon improved bog land; but so seldom, and in such small quantities, that nothing of moment, relative to its culture, qualities, or application, can be reported from the excessively limited experience of this county. It is not known

known to have been cultivated here for seed; yet, from the vast profits which are said to be derived from the cultivation of this crop, in some parts of England, not much farther south than Berwickshire, it seems at least worthy of having a fair trial.

SECTION XV.—CABBAGES, &c.

CABBAGES, Turnip-cabbage, Boor-cole, Kale, Anjou, Thousand-leaved, Jerusalem, Brussels, Parsnip, and Beets, are all entirely unknown in this county as articles of farm culture. Cabbages were formerly, however, cultivated in Berwickshire; particularly about forty years ago, by Mr Fordyce of Ayton, the late Mr Lumsden of Blanerne, and others, and excellent crops were then raised: But their cultivation has long ago entirely ceased in favour of turnips, and ruta-baga.

SECTION XVI.—RUTA-BAGA, OR SWEDES.

THIS valuable plant, which has been introduced into the agricultural system of Berwickshire, only within the

the last ten or twelve years, at least to any extent, is cultivated and applied so exactly in the same manner as turnips, that to detail the various steps or subdivisions of the plan for the reprinted reports, in this section, would necessarily become a mere repetition, in a great degree, of what has been already detailed in the 13th section of this chapter: Only such circumstances, therefore, as are different, in the culture and application of ruta-baga, from those already mentioned in regard to turnips, shall be here noticed.

Only the yellow fleshed species, or variety, of ruta-baga is cultivated in this county. At its first appearance, several farmers got the seed of the white fleshed variety, by which, for a time, the reputation of this plant was considerably injured. Ruta-baga requires to be sown a full fortnight earlier than turnips, to secure a full crop; its seed time, therefore, ought to be in the second week of May, and not later than the third week if possible. This is a fortunate circumstance; as not interfering with the seed time of turnips, as distributing the pressure of seed time, in a turnip farm, more equally, and consequently much more conveniently for the farmer.

At its first introduction into this county, ruta-baga was sown in seed beds, often in gardens, and transplanted into the field previously prepared in regular manured drills, exactly as if for turnips. But the season of transplanting was often thrown excessively late, for want of rain to enable the young plants to strike root; and, now that seed is to be had in abundance, it is sown in drills exactly in the way already described for turnips, and cultivated by the horse and hand hoe precisely in the same manner.

Generally

Generally speaking, the crop of ruta-baga is a good deal lighter on the ground than a crop of turnips; but not quite so much so as it seems, for its root is considerably more under cover. But its substance is much firmer and heavier in the same bulk, and being greatly more abundant in saccharine matter, it is greatly more nutritious in the same weight. No strict experiments have been reported, but the repeated experience of many judicious feeders has completely established, that a given quantity of ruta-baga has always kept a larger stock in full feed, or for a considerably longer time, than was foreseen, forming a previous judgement upon the experience of the duration and feeding of an equal appearance of turnips.

Ruta-baga, in its first growth and increase, is less prompt and rapid than turnips, and requires a soil of more fertility and consistency, thriving best upon soils of some depth, inclining towards loam. It likewise requires more muck to produce a full crop. Upon dry and rather hungry gravel, which often gives a good crop of turnips, ruta-baga is apt to be poor and weakly, and seldom produces roots of any size. But it bears the vicissitudes of the weather with great hardiness, and a rotten root is hardly to be seen at any season. Even when bitten by sheep or cattle, or broken by their feet, which accidents are sure to destroy turnips, the wound or break in ruta-baga skins over and heals, and the root continues sound. It likewise lasts much longer into spring, without running up to flower; and even when that stage of growth takes place, its nutritive qualities are vastly less injured than those of turnips in the same situation. Even after ripening its seed, in the subsequent July or August, the roots still retain a very considerable portion of their saccharine nutritious pulp.

pulp. Besides, it may be drawn, and secured under a light covering of straw, after cutting off the tops and tails, and will keep any time required: Thus ensuring a continuance of succulent food, so as certainly to carry on stock till clover and ray grass, or old pastures, afford a full bite.

From all these valuable qualities, ruta-baga is now universally cultivated upon every turnip farm, for carrying on the stock till pastures are ready. It is likewise an excellent food for horses, to keep them cool and open in winter, when on dry food.

Ruta-baga is very generally called Swedish turnip, but very improperly; as it is in reality a variety of the rape or cole, having a turnip-like root. It is cultivated for seed exactly in the manner already mentioned for turnip seed.

SECTION XVII.—KHOL-RABIE.

THE reporter has not heard of this plant having been tried any where in Berwickshire, except upon the demesne farm of Ayton estate; where it did not succeed so as to encourge repetition.

SECTION XVIII.—CARROTS.

Carrots have been tried, in small quantities, in this county; but their success has not encouraged imitation or perseverance. They require too early sowing, the beginning of April, to admit of the clean husbandry practised for turnips; and they need a soil of unusual depth, turned up and reduced to fine tilth, far below the power of the plough; the soil must, likewise, be free from stones, or any admixture of clay, and reduced to excessively fine tilth. They demand, in short, horticulture in every respect, and do not suit with the other objects of husbandry, as carried on in Berwickshire, because requiring greatly too much superintendance and attention.

According to information received from a very respectable quarter, it is said that carrots thrive particularly well in drained peat; Lord Balmuto of the Court of Session, having raised excellent crops in peat soil on his estate in Fife. According to his Lordships account, the ground ought not to be too dry, and a liberal dressing of dung and lime is given to the land before sowing the carrot seed. In the reporters experience,

experience, in the garden only, recent muck is uniformly injurious to carrots, causing them to fork and grow scabby. They answer best in the year subsequent to a manured crop, as after potatoes, on a deep light soil.

SECTION XIX.—POTATOES.

1. This cannot be considered as one of the Berwickshire crops; for though cultivated upon every farm, it is only in very limited quantities, merely for the use of the farmers family, and the married servants, or hinds. In the neighbourhood of towns and villages, a larger breadth is grown, for the supply of the inhabitants, usually in small patches, let out by the farmers to the villagers. In this case, the farmer gives all the horse culture; the sub-takers supply their own seed, and give all the hand labour; and are generally bound to give all the muck produced at their cottages, during that season, in addition to the rent of the land, or at a price agreed on. The rent of these small patches is generally very high; varying, according to the quality of the soil, distance from towns and villages, and the proportional demand for ground, from four to twelve pounds the acre; and not unfrequently the villagers pay as much, in rent, seed, and labour, as the full market value of the produce. But, as potatoes

are an indispensible necessary of life, and are not to be had generally to purchase in country places, the people are under the necessity of cultivating them for themselves, on the best bargains they can make with the neighbouring farmers.

From what has been premised, it seems needless to enter upon a detailed account of the mode of cultivating potatoes in Berwickshire, as no valuable information can be derived from what only forms a mere incident to the system of husbandry there pursued.

The quantity of land intended for potatoes is selected, according to conveniency, from any part of the tillage land of the farm, avoiding any very wet places, or such as are of excessively dry gravelly or sandy soil.

2. In general, they may be said to be grown without manure, as they are very often grown upon land newly taken up from lay, immediately before fallow or turnips; sometimes, however, they occupy a part of the fallow break, or of the turnip land, in which case, they get manure, as will be mentioned in the sequel.

3. The universal mode of growing them in this county is in drills, to be described below. Lazy beds are sometimes employed in the moors by the herds and cottagers. Dibbling is quite unknown.

4. The land intended for potatoes, almost universally gets one ploughing after harvest, with the view of making it mellow, by the influence of the atmosphere during winter. It is cross ploughed in spring; and gets as many cross ploughings and harrowings as are necessary to reduce it into fine tilth, to destroy annual weeds, and to remove couch and other vivacious roots, similar to the tillage for turnips.

5.

5. After the land has been effectually cleaned and reduced, it is formed into hollow drills and ridgelets, exactly as for turnips; and, if to be dunged, the muck is now laid on and spread, in the same manner as already described under turnips. The sets are laid by hand, upon the spread muck, in the bottom of the hollow drills, at various intervals from four to eight inches; the ridgelets are then split open by the plough to cover in the seed.

6. The sets are commonly cut, seldom whole; though some prefer the latter, as giving in their opinion a greater produce. In this latter case, the intervals between the sets are larger, and the quantity of seed more considerable. The cut sets are mostly prepared sometime before using, as they are found to be not nearly so liable to rot in the ground, in case of wet weather, if they have had sometime to dry, and to acquire a kind of skin, over the cut surfaces. The quantity of seed varies, according to circumstances, from ten to fifteen bushels to the acre, unheaped measure.

7. The sorts or varieties mostly cultivated are a round white; the long kidney shaped white potatoe, with a dash of red at one end, called red-nebs, or red-nosed kidneys; and a round purple coated, or excessively dark blue skinned potatoe, provincially named black-a-moors, or black potatoes. The last is considered as giving heavy crops, and they keep extremely well, with proper care, till past midsummer.

Yams or horse potatoes are not much cultivated; though some farmers grow a few for their horses, under the idea that they are greatly more productive than the varieties of potatoes usually grown for the food of man.

The reporter does not consider himself warranted to interpose his own notions, more especially when not grounded upon experience; yet he may be permitted to hint, that the cultivation of potatoes or yams, on a large scale, on farms that are not adapted to the turnip husbandry, is at least worthy of serious consideration and experiment; as by them succulent nutritious food might be provided for live stock during winter and spring. This proposal is not meant as tending to an opinion in favour of the extension of potatoe culture for sale, in a merely rural district, without manufacturing population or large towns; but only as a probable substitute for turnips, upon soils that are unfit for that excellent winter food. Potatoes admit of being taken up and stored in pies or pits, before the weather breaks up, and may be followed by wheat that season. All other winter succulent food, that can be cultivated upon clay lands, require to stand the winter; and the soil is ruined for the time, by taking them off the land; besides precluding the succession of wheat in these soils.

8. The time of setting, or planting, is usually from the end of April to the middle or end of May, according as the other work of the farm admits, being generally intermediate between the close of spring seed, and the commencement of the turnip work.

9. Sometime after setting, and before the plants begin to push up, the land is harrowed down flat. After the plants are fully up in the rows or drills, the intervals are horse-hoed, and the rows hoed by hand. These operations are repeated at intervals, keeping the soil free from weeds; and, when the plants have acquired some strength, the intervals are split open by the

the double mould board plough earthing up the plants. Two hand-hoeings, and three horse-hoeings, including the earthing up, generally suffice.

10. No weeding is used, except the operation of the hand-hoes; and no attention whatever is paid to the tops, which are either burnt on the field, or thrown into the fold-yard, to rot among the straw.

12. They are taken up after harvest, in October or November, usually by the plough, laying open the drills, and the potatoes are gathered up: or they are carefully dug up, root by root, with flat grained, three pronged forks or grapes, each digger having one or two children to gather up the potatoes. The land is afterwards ploughed and cross ploughed, and repeatedly harrowed, and the remaining potatoes carefully gathered up.

13. Potatoes are stored up for winter, in dry cool out-houses or cellars, covered up with straw, and secured from all access of frost; or in what are called pits, pies, or camps.

A pit or pie, is a conical heap of potatoes, about four feet diameter at bottom, built up to a point, as high as they will admit of, and resting upon the dry bare ground. The heap is carefully covered by a layer of straw: a trench is then dug all round, and the earth thrown over the straw, and well beaten down by the spade. The apex, or summit of the heap, is generally secured from rain by a broad grassy sod. A camp is a long ridge of potatoes, four or five feet wide at the bottom, and of any length required, built up to a sharp edge, as high as the potatoes will lie, covered by straw, and coated over with earth dug from a trench on each side. If any part of the contents is removed during

winter, the open end is carefully closed up with straw and earth, to keep out wet or frost.

14. The produce varies according to season, soil, and manure, from twelve to fifty bolls, or even more. The boll of potatoes consists of six firlots up to the edge of the wood or a little more, or of four firlots heaped up by hand; each firlot is about a bushel and a half, and, consequently, the Berwickshire boll of potatoes is about nine bushels by measure; which may probably weigh about four hundred weight and a half. In Berwick, where only any quantity can be sold in wholesale, the customary potatoe boll is five hundred weight.

The following estimate of the expence and produce of an acre of good well managed potatoe land, within the township of Berwick, has been communicated to the reporter, by a person of experience; from which it would appear that loss, instead of profit, must always be the consequence of that crop, considered by itself.

	£.	s.	d.
Rent and taxes of one acre of good soil.....	5	10	0
Ploughing and harrowing.....	1	2	6
Gathering couch and other root weeds.....	0	2	6
Forming the drills by the plough.....	0	3	6
38 loads of town manure, purchase and loading, at 5s.....	9	10	0
Spreading ditto in the drills.....	0	2	6
Laying in the sets and cutting.....	0	7	6
Purchase of seed.....	2	0	0
Spliting the drills.....	0	3	6
Harrowing.....	0	2	6
Hand-hoeing twice..... at 2s. 6d.	0	5	0

Horse-

	£.	s.	d.
Horse-hoeing twice.....	0	5	0
Earthing up by the plough.....	0	2	6
Taking up, securing, and carriage to market	2	10	0
Total..... £.	22	7	0

Allowing the produce to be 48 Berwick bolls, of 5 cwt. each, these would require to sell at 9s. 3¼d. merely to cover the expence. But the profit is to be looked for in subsequent crops of grain and clover.

15. The price, in years of ordinary abundance, seldom exceeds seven or eight shillings the boll, at which price, no farmer can afford to grow them for sale, unless his market be within three or four miles of his farm; and even then, he would be much better paid by a good crop of turnips, which add manure to the land while potatoes carry every thing away.

In a thinly peopled country, such as Berwickshire, and where the principal part of the population is situated upon the farms, there can be no inducement to grow potatoes on a large scale. Berwick is the sole market where any considerable quantity can be disposed of; and quite enough are grown in its immediate neighbourhood, amply to supply all its demand, both for home consumption, and for shipping to other places. Even that trade has of late years become so dull, as to have very materially checked the potatoe culture immediately round Berwick; owing, it is believed, to the extension of potatoe husbandry on the warped lands of Yorkshire and Lincolnshire. For some years past, the wholesale price of a boll of potatoes in Berwick, weighing forty stones, and supposed

to measure seven firlots, or ten and a half bushels, has not exceeded eight shillings. Four such bolls, or one ton, will form a good load for a cart and two horses, and will not, therefore, produce more than thirty two shillings; the expence of sending them to market, from a medium distance, by hired carriage, will not be less than nine shillings, leaving only twenty-three shillings to the farmer, or five and ninepence for each boll.

16. The particulars inserted in the plan of the reprinted reports, relative to the application of the potatoe crop, cannot be enlarged upon in this report, as they are almost solely grown for the food of man, and are only incidentally applied to the use of live stock, without any very marked attention. 1. Hogs form no material object in Berwickshire husbandry, and are only reared, in general, for the family use of the farmer. They unquestionably get a portion of the potatoe crop, for the most part boiled. 2. Horses and cows are both occasionally assisted by potatoes, but never to any material extent. 3. As the crop never is carried to any considerable extent, there are no instances of feeding beasts upon potatoes; but occasionally in spring, when turnips have failed before grass was ready, and potatoes were abundant and cheap, a very few farmers may have carried on their fat beasts on potatoes for a week or so. 4. The reporter has never heard of potatoes being given to sheep. 5. There is nothing particular known in the district, worth reporting respecting boiling or steaming of potatoes. 6. The art of drying them for keeping has not yet found its way into this county. 7. No manufacture of bread or starch from potatoes takes place in the county. A few notable housewives

housewives may make a little starch privately; but no particulars in the process, worth detailing, have reached the reporter. A mixture of potatoes boiled and mashed, and then kneaded up with wheaten flour, is employed in many families as household bread. It is kneaded up with yeast, and baked in the usual manner, and makes a very pleasant bread. The proportion of potatoes may be, from about a fourth to a third part of the flour.

17. Having already observed, that the culture of potatoes is extremely limited in its extent, upon every farm, and merely confined to necessary family use, no direct experience can be furnished from this county, to ascertain the question as to the exhaustion or fertilization of soil, in consequence of the potatoe husbandry. The general opinion, however, is that, to retain land in a state of fertility, which is regularly under a crop of potatoes, in every rotation or course of cropping, requires a very considerable supply of extraordinary manure. This, of course, can only be procured in the near neighbourhood of towns and villages; and there only, likewise, is the culture of potatoes, in any quantity, at all eligible, for other reasons already advanced. It can hardly be, that a crop, which contains so large a quantity of farinaceous substance, should be produced without abstracting from the soil a proportional quantity of those elements of vegetation which constitute the food of plants, and which occasion fertility in the soil; more especially as potatoes, when grown for sale, return nothing whatever to the ground on which they grew.

18. Upon the small portion of ground which is appropriated to the potatoe crop in this county, the succession

cession is various, according to circumstances. Where they have occupied a portion of the fallow break, on strong soils, wheat usually succeeds; and farmers in the neighbourhood of large towns, where abundance of manure is to be purchased, allege that potatoes form the best preparation for wheat; and yet they allow that the potatoe crop itself is, most commonly, attended with loss. On turnip farms, that have no town manure, the potatoe crop seldom gets muck, and is succeeded by turnips. If cultivated on the turnip break, they are succeeded by whatever may follow the turnips in the same field.

18. It is asserted in the Statistical Account of Scotland, vol. xviii. p. 282. that Mr Robert Graham of Tamrawer, in the parish of Kilsyth and county of Stirling, was the first person in Scotland, who cultivated potatoes in the open field, by dibbling and hand-hoeing. His first essay, in this most highly useful husbandry, was in the year 1739, when he planted potatoes by means of the dibble, on about half an acre of croft, or old infield land, at Neilston in that parish; and he continued to carry on the potatoe husbandry, with encreasing ardour and uniform success, for many years, in that neighbourhood, and diffused their cultivation by his example in other districts, on lands which he rented in the vicinity of Renfrew, Perth, Dundee, Glasgow, Leith, and Edinburgh. One instance of his success is recorded on sufficient evidence, that in 1762, he planted one peck of potatoes with the dibble, and in the October of that year, dug up an increase of 264 pecks.

Though not belonging to this county, yet as the neighbourhood of Kilsyth seems to have persevered with great industry and attention, in following the example

ample of Mr Graham, it may not be unimportant to transcribe what may be termed the Kilsyth aphorisms respecting the potatoe culture, from the account of that parish, which is an excellent model of statistical information.

1. The kidney potatoe is there reckoned the most productive and best tasted variety.

2. Ground that has never been broken up before, or at least, which has never produced potatoes, although not better manured than other land, is by much the most productive of this crop.

3. Potatoe sets ought to be planted at the distance of eighteen inches from each other, even when not drilled.

4. When not drilled, the plants ought to be carefully earthed up by the hoe; when in drills, by the double-mould-board plough.

5. When lea or grass ground is to be employed, the muck ought to be spread in the preceding autumn, or very early in spring, that it may incorporate with the soil, before it is ploughed in; and even on stubble land this practice is deemed advantageous.

6. Lime is considered as being very unfavourable to the cultivation of potatoes; and it is even alleged that its bad effects continue fourteen or even twenty years. One of these injurious effects, and the only one mentioned by the Reverend author, is that the crop of potatoes, on recently limed land, is almost always scabbed, though the produce may be large.

7. The sets for seed ought to be pretty large, and should be kept a week or two, after they are cut, before planting. This is peculiarly advantageous in wet grounds. The cut surface becomes dry and shrivelled, and

and as if covered by a tough skin, which prevents the sets from rotting, and tends to make them vegetate quickly.

8. When frequently repeated, or oftener than once in seven years, on the same ground, potatoes are found to be a very scourging crop. If once every two years, they soon reduce the soil to a *caput mortuum*.

9. A very productive crop of early potatoes may be raised and dug up before the middle of July. And turnips, greens, or clover and grass seeds may be raised as a second crop on the same ground in the same season, after having realized a clear profit of ten to twelve pounds an acre from the potatoe crop.

10. In gardens, the stocks or stems and roots of greens and cabbages, laid regularly in the bottoms of the drills, are one of the best manures for potatoes; both enriching the ground, and keeping the soil open, by which the shoots or running roots of the potatoes, have room to spread.

In the Statistical Account of Leuchars, vol. xviii. p. 589, it is alledged that, when the particular part of the potatoe, which adhered to the root or runner of the former year, is used for a set, the plant which grows from this is uniformly curled. The Reverend author, therefore, states it to be of material importance, that, before the potatoes intended for seed are cut up into sets, a careful person ought to be employed to cut off this part from every potatoe, which should be kept for other use. He says, likewise, that when too little of the substance of the potatoe is left below the eye of a set, the curl is extremely apt to take place in the subsequent plant. This observation is much against the practice of scooping out the eyes for

for seed, recommended some years ago. Wet land and wet seasons are likewise observed to produce the *curl*; of which he adduces the following proof. Two long contiguous ridges were planted with potatoes in a wet year, with exactly the same culture, manure, and seed. Of these ridges one was rather lower and flatter than the other. In the lower ridge, not one plant in a hundred escaped the curl; while in the higher ridge, four rows on each side nearest to the furrows were infected by the curl, with very few exceptions, and the four rows on the crown, or highest part of the ridge, were healthy and vigorous.

Raising Potatoes from Seed.

THE following circumstances, respecting the mode of raising potatoes from seed, have been thought worthy of being inserted in this report. They are extracted from the Statistical Account of the parish of Kinloch in Perthshire. Statistical Account of Scotland, vol. xvii. p. 743.

"From repeated experiments, it has been found, that the most effectual means of preventing potatoes from degenerating, and to render them more prolific, is to raise them, occasionally, from their true seed, in the apples or fruit. For this purpose, chuse a few large ripe apples, from a perfectly healthy plant, of an approved kind, or variety, and preserve them carefully through the winter, in some dry sand, so as to keep all the apples apart from each other. In the beginning of April, pick out the seeds from these apples, and sow it then, in narrow drills, or rows, in a prepared bed of rich

rich garden ground. Or, which is much easier, mash the apples and sand together, and sow this in the drills without taking the trouble of separation."

"When the seedling plants are about an inch high, raise them carefully, with as much earth as possible adhering to their roots, and plant them out in another prepared bed of rich earth, in rows, or drills, about fourteen inches wide, having intervals of about ten inches between each plant. Take them up when ripe, and secure them over winter in a well guarded pie."

"Next season, plant these seedlings in good ground, with abundance of room; and this second crop will arrive at the full size of potatoes planted in the ordinary manner. Besides which, potatoes raised according to this plan, from the seed, will continue, for several years, to give a considerably more abundant produce, than those which have been long cultivated from sets in the ordinary way; and they will be much less liable to the disease usually called the curl."

SECTION XX.—CULTIVATED GRASSES

THE reporter finds himself, most reluctantly, yet necessarily, obliged, in this section, to deviate considerably from the plan for the reprinted reports, because the Berwickshire system, in regard to the cultivated grasses, cannot possibly be reported under the divisions

divisions of the new plan. In this county, ray grass and the clovers, red, white, and yellow, or trefoil, are always grown mixed together, in different proportions, according to circumstances, to be mentioned in the sequel; and, therefore, it becomes altogether impossible to treat of them separately. It is necessary, therefore, here to adopt the former plan, with such additions as are suggested by the new arrangement.

1. The cultivation of artificial grasses, for hay and pasture, has already been particularly mentioned, as forming a very prominent feature of the Berwickshire system of husbandry; and, from what has been already repeatedly insisted upon, it seems quite needless to repeat the course of rotation which takes place, previous to the sowing of grass and clover seeds; or what may be termed the preparation of the soil for, and the succession of that crop which is unquestionably the original foundation, and the sure support of the Tweedside husbandry, or, in other words, the convertible system of agriculture.

It may suffice to say, that the artificial or cultivated grasses, in the practice of the best farmers, are always sown when the soil is in its highest state of fertility and tilth; and after having been, as much as possible, cleaned from weeds of all kinds, both vivacious rooted and annuals, or seedlings: that is to say, mixed grass and clover seeds are uniformly sown with or among the first grain crop which succeeds a well wrought and manured fallow, or a turnip crop.

This essential character of the new, or improved husbandry, is diametrically opposite to the old exploded system of this country: in which grain crops, upon the tillage land, were persisted in as long as they could continue

able, but ruinous; while the former is uniformly quite satisfactory to the cultivator, both in its own intrinsical value, and in its obviously beneficial consequences upon the after succession of crops. To follow out this subject, instead of a subdivision of a section, would lead to a formal treatise upon the whole system of husbandry pursued in the district under report; and which has been already very particularly insisted upon.

2. In the course of this report, it has been frequently and strongly urged, that artificial grasses, in the management of all good farmers, are uniformly sown when the soil is in its highest state of productibility; or, in other words, with the first grain crop which immediately follows a complete naked over years fallow, or a crop of turnips. Consequently, they are sown indiscriminately with or among wheat, barley, or oats.

3. The sorts of artificial grasses, and the quantities of each, in the mixture given to the acre, depend partly upon the nature of the soil, and partly upon the intention of the cultivator, in regard to the temporary or permanent state of the field, or break, which is to be kept in grass.

When intended to remain only for one or two years in grass, and to be then taken up for a course of tillage, the usual mixture of artificial grass seeds for an acre of good turnip soil is, about half or two thirds of a bushel of clean and well dressed ray-grass seed, with ten or twelve pounds of red clover, or, as it is usually called in this country, broad clover. Sometimes two pounds of white clover, and a pound or two of yellow clover or trefoil, called provincially hop clover, are added to the mixture, proportionally diminishing the quantity of red clover seed: this last addition is more especially

given, when the crop is particularly intended for pasture. On clay lands, or soft spungy soil, or land subject to wetness, a larger portion is usually given of all the enumerated seeds, from a third to a half more, according to circumstances.

As red clover is by no means permanent, but usually dies out in the third year, and often in the second; when the grass is meant to remain for a greater number of years, or for permanent lay or pasture, the general mixture is somewhat like the following, though different farmers vary in some of the proportions. One bushel of clean ray grass seed, six to ten pounds of white clover, four to six pounds of red clover, two pounds of trefoil, and frequently a pound of narrow leafed plantain, called here rib-grass. In a future section, notice will be taken of one apparently successful experiment, in which a proportion of the seed of chicory was added to the mixture, for permanent pasture. The reporter, in laying down a small field for permanent pasture, added two pounds of cow grass, or perennial red clover, to the mixture, for each acre; but, having never allowed the crop to rise to the scythe, can give no certain account of its success.

There are hardly any instances of the seeds of natural grasses, as they are called, being sown; at least, none that have come to the knowledge of the reporter; probably because old grass, or improved upland meadow, is hardly ever mown for hay; and, because farmers are most judiciously afraid to poison their fields, by sowing, perhaps, an infinity of the seeds of weeds, that may afterwards give excessive trouble and expence to eradicate, when the land comes again to tillage. Of this the reporter had a very vexatious proof on his first commencing

commencing farmer. His predecessor had sown off a field in grass, with the sweepings of livery stable lofts at Berwick, in the neighbourhood of which a number of small foul meadows are occupied by the burgesses. When that field came afterwards to be worked as turnip fallow, the heaps of gathered couch grass roots were not much less considerable than the cocks of a moderate hay crop.

Marked attention is given to the quality of the ray grass seeds, especially when the land is to remain in grass for more than one year; as, especially within the last fifteen or twenty years, a variety of ray grass, from England, has often been sold under the name of London seed, that grows only for one year. There is no mark or criterion by which this annual ray grass can be distinguished from the permanent, or perennial, except actual experience of duration. Every farmer, therefore, is, or ought to be, careful to purchase from a person of character, who is able to declare that the seed he sells, is the actual produce of perennial ray grass. "This annual ray grass looks well, and gives a good crop the first year; but never springs again from the roots. This has been the occasion of much loss to the farmers, especially in cases where the fields were laid to grass to remain for the rest of the lease. If measures could be devised to prevent this kind of seed from being disseminated, an essential service would be conferred upon agriculture." A. L.*

* Bridge and Parsons, seedsmen, 15 Borough, London, have pledged themselves to sell grass seeds, the quality of which may be depended upon.

Something of a similar difference has been observed, with respect to red clover seed, as procured from England or Holland. The plants from the Dutch seed have been very generally observed to die out before, or in the second season; whereas the English seed produces plants which stand over the second year, and are not all gone in the third.

4. The time of sowing varies according to circumstances; but, when sown among broad-cast oats or barley, is generally immediately after these grains, when the land has got all its harrowings except the last course. When sown among drilled grain, the grass seeds are usually postponed until the soil between the drills has been hand-hoed; and then, if the season be dry, advantage is taken of the first summer shower, to insure the vegetation of the grass seeds, which are then immediately sown. Sometimes the grass seeds are sown immediately previous to hand-hoeing, which operation covers in the seeds, instead of harrowing; and the whole is finished off by the roller.

5. Universally, the various seeds of artificial grasses, intended to be sown, are carefully mixed together, by repeated turnings on the barn floor, and in the proportions intended for use. If for different purposes, or for different soils, the mixture for each must be made separately, and in the quantities and proportions to suit the extent of each field. They are sown by hand from a sheet, usually by what is termed three casts to each ordinary ridge of land; the sower going three times along each ridge, flinging a pinch of seeds inwards each step; once along each side, and once along the wind side of the middle. For a double ridge of thirty feet, five casts may suffice; or even four from a hand that scatters well.

6.

6. The land, immediately after sowing, is slightly harrowed, either by the common harrow, by a very light harrow with numerous small teeth, or by a bush harrow. Some people are afraid of the operation of the harrow tearing up the grain plants, and trust entirely to the roller for covering the seed. But long experience sufficiently shews, that all the apparent injury from the harrow teeth, is amply compensated by the subsequent vigour with which the corn plants out, or tillers.

7. As soon as possible after harrowing, the land is finished off by the heavy roller; which is sometimes loaded with stones, for very light or puffy soils, or where the soil is peculiarly cloddy, or much covered by land stones.

8. No culture whatever is given to grass land, except spreading mole hills, cutting thistles or other large weeds, and gathering off surface stones, especially when intended so be mown. These, of course, must all be in the subsequent year or years after sowing. The heavy roller is sometimes repeated, especially on tender soils, to consolidate the earth about the roots of the plants, especially in spring or autumn.

9. When the ray grass seed is intended to be saved from the hay crop, the operation of mowing must of course be postponed until that is ripe; otherwise, the hay is reckoned sweeter and more nourishing, and the soil is believed to be less exhausted, when the hay is cut at the time the ray grass is in flower, and when the red clover is in full bloom. When mown, it is generally allowed to remain in the swathes, or scythe rows, for some days, until almost ready to take up. It is then turned over, without tossing; and is gathered

the same day, into small cocks, about three or four feet high, and the same in diameter, put up quite lightly. After a few days, these cocks are drawn together, mostly by means of a horse, and made into ricks of about a cart load each, well trampled down, and secured by one or two hay ropes. It remains in this last state till sold, or till considered fit for stacking. There is nothing peculiar in stacking to merit notice.

10. As there have been no comparative experiments recorded in this county, respecting soiling, the reporter has nothing to add on this subject to what has been already mentioned in sect. x. § 4. of this chapter when treating of tares.

11. In the practice of Berwickshire, much the larger proportion of cultivated grass produce, both young and old, is applied to the feeding of live stock; either milk-cows, young cattle, horses, breeding sheep, or fattening cattle and sheep. Great care is necessary in putting sheep and cattle upon rank clover pasture; as it is very apt to ferment in their maw, or first stomach, which it violently distends, stopping all passage either up or down; and, if not quickly relieved, by letting out the pent up foul air or gas, it speedily bursts, and kills them. The best precaution is, to keep them out of such fields, until all the dew is dried up, and only to allow them to use it freely in dry weather, until well accustomed to it. Cows especially are liable to this misfortune of bursting, during great part of summer.

Some allege that the danger of bursting only takes place when the pasture plants are covered by the thin gossamer fibres, which are spun in countless myriads by

by some minute species of field spiders. But this fancy probably proceeds from these fibres being only distinctly visible when embued with dew, or by hoar frost; which circumstance, of superadded moisture, is much more probably the cause of danger, by the over abundant wetness encouraging fermentation in the stomach.

The most effectual remedy for this danger, is to get a flexible tube down the gullet into the stomach; which must be done gently, lest violence should tear the coats of the bottom of the gullet. This operation gives instant vent to a vast quantity of extremely fetid gas or air, and the animal is instantly relieved. A hollow flexible cane, with a rounded and perforated bulb at the end, of smooth hard wood, serves excellently for this purpose. Even a stiff rope, with a ball of rags firmly tied to its end, and pushed down, being first well greased, allows the air to escape readily by the sides of its strands.

The old practise, still almost universal, is to stab or pierce the inflated stomach, by a small pointed knife, or by a trocar and canula. The gust of fetid air follows the wound, and the animal frequently recovers. When this is the case, the beast ought to be fattened with all expedition, and sold or slaughtered; as it is apt to become unhealthy in the subsequent season. No such evil effect ever follows the use of the tube or rope.

In feeding upon grass lands, where the fences will allow, it is customary to keep a mixed stock of cattle and sheep in each field, and always to stock lightly, often shifting from field to field, to preserve a full bite. The two kinds of stock have thus their choice of food,

more especially as no animal likes to eat the tath, or rank tufts of grass, which grow where one of their own species has dunged or staled. It is of material importance that sheep should not feed in pastures where much tath grows that has arisen from horse dung; as this is very apt to give occasion to a peculiar species of worm to breed in their livers, the very general consequence of which is to cause the rot. These worms are very like a minute flounder in shape, from half to three quarters of an inch long, having a long round swan neck, with a minute black head. After the operation of hard frost, these horse taths become perfectly safe for sheep.

12. Owing to the lateness of the climate of Berwickshire, no attempt is ever made to save the seeds of any of the kinds of clovers mentioned in this section; which therefore are all annually purchased from England or Holland. The expence of this to the county at large, and to each individual farmer, must be very considerable; but sufficient data are wanting to make even an approximated calculation of its extent. Exclusive of ray-grass seed, now mostly provided at home or from neighbours, each acre of cultivated grass may cost, upon an average of years, about fifteen shillings for clover seeds. There may be in the county 20,000 acres sown annually with artificial grasses: If so, the yearly expence for clover seeds alone may amount to L.15,000. The expence is unavoidable; but is amply repaid, both to individuals by the profits derived from grass land, direct and indirect; and to the county at large, by what may be called the balance of farming trade, by the yearly sales of grain, cattle, sheep, and wool, into other parts of the kingdom.

When

When the ray-grass seed is to be saved, it is generally thrashed when the cocks are drawn together, immediately before they are formed into tramp ricks. It is done upon a floor of boards, having a number of cloths spread out to receive the seed, which is packed into sacks, and carried to a granary floor. The raw seed must be there spread out as thin as possible, with abundant access of air, and turned twice a-day for some time; after which it must be turned daily, till thoroughly dry. It may then be dressed, or may remain mixed with the chaff till next spring. It is dressed by the winnowing machine or fanners, exactly in the same manner with corn, but with a very light wind, by turning the fanners gently: or it may be sifted or riddled out of doors, in a gentle breeze, the heavy seeds falling nearly below the sieve or riddle, while the lighter chaff blows to some distance.

At other times the seed is not thrashed out till spring; and is either done by hand with flails, or by putting the whole through a thrashing mill; and is dressed up as before mentioned.

The produce of seed from the acre depends very much upon the crop having been very lightly handled in making, and hardly ever exceeds eighteen bushels of seed to the acre; which may be worth five shillings a bushel, in years of ordinary abundance.

Some farmers select a part of their hay field, or parts that have less clover among the ray grass, and tie it up in bunches, like corn sheaves, which they set upon end like shocks; and either build this when dry into a rick, to be thrashed in spring, or thrash when properly dried, and mix the hay with the rest of the produce of the field.

13. The lattermath, aftermath, or *foggage*, as it is called provincially, is hardly ever made into hay, but is often cut as a continuation of the soiling process. In the rich vale of Lothian, a part of which belongs to this county, and where a great abundance of sea-weed keeps the soil in constant active fertility, the first years crop of clover and ray-grass is often three times cut for soiling the farm horses. A great part of the lattermath in this county is pastured by the various live stock of the farms.

14. The produce of grass land varies, of course, according to soil and seasons and application. A poor crop of hay may consist of 100 stones of twenty-two and a half avoirdupois pounds each, or twenty hundred weight, a good crop of double that quantity, or 200 stones, and from that to 250 or even 300 stones, which latter is a very superior crop. The value must of course vary exceedingly, according to produce and demand. From 6d. to 8d. a stone, in years of ordinary abundance, up to 15, 18, and even 24 pence in years of extraordinary demand. In spring 1764, hay sold for one shilling a stone, which was then thought an enormous price; equal, probably, on a comparison of rents, value of stock, and other circumstances, to four or five shillings in 1808.

Hay is not often sold by good husbandmen, except in the neighbourhood of towns and villages whence manure can be purchased, and to which the carriage of hay is convenient, and except in years of extraordinary demand, when high prices are too tempting to be resisted. Indeed, the low price of hay in this county, averaging perhaps sixpence a stone, forty-five shillings the load, or fifty shillings the ton, gives no encouragement for making more hay than is required for the farm stock; and this low price is obviously owing to the

almost

almost entire absence of any horses of luxury, or others than those kept by the occupiers of land, either as farmers or resident proprietors.

15. The application of the hay grown upon farms, is chiefly to the farm horses in spring, when white straw has become dry and little nutritious; to cows about to calf, and afterwards; and to the breeding sheep flock, or ewes in lamb, along with a moderate supply of turnips.

16. The duration of cultivated grasses is subject to considerable variation. It has been already said, that the red clover seldom lasts beyond the second year; and, therefore, that lays, which are intended for permanency, ought to have a full mixture of white clover. Yet, upon the best soils, and with the most proper mixtures, cultivated grasses uniformly fall off in their value for some years, less or more, according to circumstances that cannot be appreciated or explained. The first year is certainly the best. The second is seldom nearly so good, perhaps not equalling one half of the first in value. The third commonly falls off to about half the value of the second. After this, the grass continues with little variation for some years, and then gradually improves, until it becomes good old pasture; which it usually does in from twelve to fifteen years from its first laying down. All this must be owing to the gradual dying out of the whole or part of the cultivated grasses, and the afterwards gradual spreading of other plants to fill up the soil to its utmost power of production; but would require very long, continued, and patient observations, to be able, accurately to explain, and numerous experiments to determine, how best to bring new lays, and most expeditiously, into permanently valuable pastures.

17.

17. In the close neighbourhood of towns, where the land runs rapidly round the course of crops, and mixed clover and ray grass consequently returns about every fourth year, complaints have been often made of the falling off of the clover crop, and the land has been said to have tired of clover. Even in the country at large, where the course of crops is more gradual, as already stated under the head of rotations, iii. sect. of this chapter, complaints used to be made long ago, that the clover crops fell much off by repetition. This may have been partly owing to the aptitude of soil to produce a new crop with great profusion, when first committed to it, partly perhaps to too quick recurrence of the clover crop on its first introduction.

It is said, that as clover, in its chemical analysis, contains a considerable proportion of gypsum, land cannot produce that species of grass, if the gypsum in the soil is exhausted; and that by sowing gypsum with clover, the land would never tire of it. This should be ascertained by accurate and decisive experiments.

As husbandry is now universally carried on in this county, by the regular interposition of several years pasturage, between every course of crops in tillage, no such complaints of the land tiring of clover is to be heard. Therefore, it is to be presumed, that this alternate system of pasture and tillage, is the best variation of cropping on land that seems tired of clover.

18. The culture of wheat after grass, is so recent in this county, that its experience does not warrant any decisive opinion on the question of, which is the best application of the cultivated grass produce, as a preparation for wheat? That grain is grown upon land taken out of grass, or lay, in several modes, as formerly mentioned, when treating of the course of crops.

19.

19. Besides wheat, in the section devoted to the ordinary course of crops, oats have been mentioned as the most usual succession upon newly taken up grass land.

In concluding this section, it may be proper to repeat, that from the circumstance of clover and ray grass, being never cultivated separately, and cultivated grasses being almost always continued some years in pasturage, the different subdivisions of this section could not possibly be made to quadrate with the new plan for the reprinted reports, as it was necessary here to treat of mixed clovers and ray grass together, instead of each separately.

SECTION XXI.—SAINFOIN.

This is not at all cultivated in Berwickshire, and cannot therefore be treated of in this report. Some years ago, the reporter tried it unsuccessfully. A field of three acres of excellent turnip soil, in high order, and recently limed, was sown with sainfoin, among barley after turnips. Though half a quarter of apparently fresh seed was given, not one plant appeared. Yet, as the season was unusually dry, and the natural moisture of the soil had been much exhausted, by hoeing the drilled barley, previous to sowing the sainfoin, and as the field got, at the same time, seven pounds of red clover to each acre, which equally failed; the sainfoin seed may be supposed to have perished for want of sap; and the reporter

reporter is disposed to repeat the experiment on the first favourable opportunity.

SECTION XXII.—LUCERNE.

A small field recently fallowed, limed, and dunged, was sown several years ago, by the reporter, with lucerne in drills, a little after midsummer, without any grain crop. Abundance of young plants came up, and made vigorous progress before winter set in. But almost the whole were killed by the subsequent winter, not unusually severe; so that the field had to be ploughed up, and sown with mixed grass and clover seeds in the usual manner. In this instance, the failure of the attempt to cultivate lucerne, so far north, seemed complete, and leaves no inducement for repetition; and the reporter has not heard of any similar attempt in this county.

SECTION XXIII.—CHICORY.

In one instance only, that has reached the reporter, has chicory been cultivated in this county; and that was

was in addition to the usual mixture of ray grass and clover seeds, on a large field intended for permanent grass. The chief purpose of the chicory, in this solitary experiment, was to secure a sufficient stock of artificial plants for pasture, until the field might stock out with abundance of natural grasses.

The experiment is too recent, and of too mixed a nature, to admit of any decisive opinion. It may, however, be mentioned, that the plants have thriven, and remain vigorous through the third year of their growth, and are liked by live stock. The farmer was disposed to have extended the practice; but was prevented last season, in consequence of the seed having become enormously dear.

SECTION XXIV.—BURNET.

THIS plant is entirely unknown in this county.

SECTION XXV.—HOPS.

No hops are ever attempted to be cultivated in Berwickshire.

SECTION

SECTION XXVI.—HEMP.

THIS was formerly grown, in small quantities, upon every tillage farm, often in the rick-yards; and used to employ the farm servants, in the long winter evenings, to peel, or separate the fibrous from the woody and cortical parts, and to twist and plait the hemp into cart ropes, and various other articles of harness, then all made at home. Now all these things are purchased from the saddler, and hemp culture has fallen into utter disuse.

SECTION XXVII.—FLAX.

FLAX, provincially called *lint*, is not at all cultivated, as any material object of husbandry; and is merely grown in small patches for the use of the family of the farmer, and for the wives of the hinds or married ploughmen and herds, as part of their gains, or wages in kind. Its culture and after management, is not, there-

fore, conducted in any stile of excellence, or with any marked attention. On the contrary, it is as much as possible discouraged by the farmers, by whom it is considered as a severely exhausting crop, and as not attended by any profit at all corresponding to the trouble and expence of its cultivation, and the numerous minute steps of its preparation for use, which are utterly incompatible with the other more important attentions of the farmer. From these considerations, it is obviously unnecessary to load this report with any detail of the trifling and rather negligent culture and management of the cottagers.

The earnings of spinners cannot be reported here; as spinning is a mere by-job, for winter evenings and bad weather, when outwork, the staple employment of the women and girls of this county, cannot be prosecuted. This must necessarily be the case so long as these people can earn tenpence to a shilling a-day by field labour in chearful society; instead of the tedious in-door monotony of spinning, whereby hardly half as much can be procured. In the manufacturing parts of the country, engine or mill spinning is fast occupying the vacant place of women; and is said to produce much better yarn, more especially of the coarser sorts, but has not hitherto reached this county.

SECTION XXVIII.—SUNDRIES.

Of the other articles of culture, enumerated in the seventh chapter of the new plan of the reprinted reports, Liquorice, Chamomile, Teasils, Carraway, and Corianders, not one of them are in the smallest degree attended to as articles of farm culture in this county, and are only to be seen in gardens. They do not therefore fall to be treated of in this report.

CHAPTER

CHAPTER VIII.

GRASS LAND.

SECTION I.—MEADOWS.

In this county, the term *meadow* is used to denote marshy or boggy land, about springs and on the sides of small brooks, carrying rank coarse grass, mostly composed of rushes and other aquatic plants. These grounds are, for the most part, mown yearly, when the fields in which they lie are not in pasture, for a coarse kind of hay, which is given in winter and spring to cows. Such meadows used to be found in every farm of the Merse or low country, and almost in every field; but are now fast disappearing every where, through the improvement of draining, by which they have been converted into useful arable land, or sound dry pasture, or both in their turn. In the sheep hills, these wettish patches are carefully *hained*, or preserved by the herds every summer, and mown for hay, which is kept for supporting the stock in severe winters.

It has been already mentioned, that considerable extent of permanent grass land, in inclosed fields of various dimensions, are to be found around the residences of almost all the proprietors in the lower country, which are annually let for pasture. These, probably, are analogous to the meadows in the south of England. None of them, however, are regularly applied to the purposes of meadow land, though some are occasionally mown for hay.

Owing to these circumstances, the permanent grass lands of Berwickshire certainly fall more immediately into the next subsequent section, and none of the particulars required in the plan of the reprinted reports can be detailed respecting them in this section. They are never manured; excepting that some, which have not perhaps been very well laid down, are limed on the surface to improve the grass. No other culture is ever given, except spreading mole hills every spring, and sometimes mowing tufts of nettles or docks. Many of them have been much improved by judicious draining, without any tillage. Spreading muck on the surface of grass land is hardly ever known in this county, except perhaps to improve and beautify a small field of grass or lawn, in the immediate vicinity of a gentlemans house.

Irrigation has not hitherto acquired any footing in Berwickshire, where its principles, and their application, are as yet not at all understood. Some attempts, that seemed rather injurious than useful, may be mentioned in a subsequent part of this report.

SECTION

SECTION II.—PASTURES.

THE pastures of Berwickshire are infinitely various, from the rich feeding lands around gentlemens residences, and fine improved fields of mixed ray grass and clovers on every farm, to the comparatively barren sheep pastures of the hills. But from the mixed nature of the stock which is put into all of these pastures, except the last, nothing very important can be reported concerning the particulars in the arrangement of the plan for the reprinted reports.

The feeding lands are taken yearly, as has been already mentioned, at public auctions, in every variety of magnitude, and at various rents, according to quality and demand, by farmers, chiefly for conveniency of carrying on the regular stock of their farms, so as not to be forced to go to market till prices are suitable or tempting: They are variously stocked, with mixed feeding beasts, or young cattle, or sheep of various ages, or young horses, or all mixed together. These are occasionally going off to market, or taken home to the particular farms, as the home pastures become thinned of stock, or when the lattermath of the hay fields are ready for pasturing; and their places are supplied by draughts from the farms, by weaned lambs or calves, or by pur-

chases from different markets, for feeding, or for carrying on to feed in winter upon turnips. Or these fields are occupied by the still more miscellaneous and continually changing stock of butchers or jobbers, serving as receiving fields for their constant purchases, till the demand at market enables them either to kill or sell to advantage.

No regular grazing farms, or hardly any are known, that belong to this description of rich feeding land; and the foregoing picture of their almost universal modes of occupation, altogether precludes any accurate detail of the quantity of stock which they can support, or of the produce in meat per acre which they are able to give. It is a generally received opinion, that an acre of rich feeding land ought to maintain and feed a sizeable bullock, or five full aged Leicester wedders; but such lands are rare; and are still more rarely stocked in so regular a manner as to allow the ascertainment of their actual powers as to produce. And besides, farmers, jobbers, graziers, and butchers, cannot be expected to lay their particular experience open to view upon enquiry; any information that is to be procured from incidental conversation, is too vague and uncertain for serving to found any calculation upon, that could satisfy curiosity, much less to prove useful.

In the yearly auctions of these grass fields, the rents vary, according to estimation of the several fields, and according to the demand, from L. 2. to L. 5. an acre.

From what has been already said, the produce of meat from the acre cannot well be estimated, more especially as the stock is almost always mixed, part beasts and part sheep. If the idea already mentioned of supporting a sizeable ox or five aged Leicester sheep to the acre be right, an acre of rich feeding land may perhaps

perhaps produce 16 stones of beef, 14 pounds to the stone, or 12 to 13 stones of mutton, besides the growth of wool. But the reporter has no personal experience on which to ascertain this object of inquiry; and his information from others has not been very satisfactory on the subject.

2. No regular dairy grounds are to be found in Berwickshire; and none whatever are let particularly for that purpose. Any little dairy there is, is entirely confined to such quantity of milk as can be spared from rearing the regular yearly supply of young stock on each farm, or rather after the calves are weaned. This serves to supply each family with milk, butter, and cheese, and sometimes leaves a small superfluity for sale, chiefly of butter, sold fresh by such as live near towns and large villages, or salted by those who are at a considerable distance from markets. But the quantity is altogether insignificant upon each particular farm. The wives of the married ploughmen and herds, who have always one cow each, make their minute dairies an object of particular attention; and by them chiefly are the few country markets, within their reach, regularly supplied. Where too far from markets, they often feed their yearly calf for the butcher, and apply their milk afterwards to the making of salt butter, which they sell to country shop-keepers.

As the cows are generally kept on the usual pastures of each farm, variously intermixed with other stock of all kinds, as horses, young cattle, and sheep, and frequently shifted from field to field, no particular detail of the stock, produce, and rent per acre can be hazarded. It is generally believed that a milch cow of good size eats as much as a feeding sizeable ox. If so, each cow

will require an acre of good feeding pasture to keep her in full milk; and consequently the value of keeping a cow upon good pasture, for the six months from Whitsunday to Martinmas, cannot be less than four pounds ten shillings to six pounds, according to circumstances; and, accordingly, in those village clubs, which have formerly been mentioned, as hiring pasture fields at the annual auctions, the stints, or shares of rent falling upon each cow, belonging to the members, have for some years been within these extremes.

3. In the general system of Berwickshire husbandry, as already particularized, the continually recurring cultivated grass on each farm, of all varieties of age or continuance, is appropriated to pasture, and very generally stocked with sheep, in conjunction with cattle of all ages, and the farm horses. Every tillage farm of any size, has a regular breeding flock of Leicester ewes, together with the produce from these in the various stages of their growth. But, from the mixture of stock, and the continual shifting from one pasture to another, and from young clovers in spring, and to lattermath after hay harvest, and stubbles after corn harvest, and the combination of all these with the shifting to and from the pasture fields taken at the yearly auctions, it becomes impossible to give any distinct idea of the quantity of stock, produce, or rental value by the acre.

Natural sheep pastures, strictly so called, are confined to the uplands of Lammermoor and Lauderdale, and are partly composed of green hill, and partly of heath; both being interspersed with patches of various extent of marsh or peat bog, of various depths and descriptions, which have been already adverted to in former parts of this report, and will fall again

to

to be mentioned in the eleventh chapter. And as the system of sheep farming, in the analogous and neighbouring great sheep districts of Roxburghshire, Selkirkshire, and Peebles-shire, has been already treated of in detail, in the reports of these three counties, it seems improper to load the present with what could only be a repetition of nearly the same circumstances, and which do not any way belong to the peculiar Berwickshire husbandry, the appropriate object of this report.

4. The whole detail of laying land to grass has been already systematically explained, in the preceding chapter, particularly in its twentieth section, devoted to the subject of cultivated grasses.

5. The mode of breaking up grass land, as practised in Berwickshire, has been already fully detailed in chap. vii. sect. xx. and in the general account of the system of tillage pursued in this county.

In the very few instances where permission is given to break up valuable old pasture lands, with a view either towards improvement, or for higher rents for a few years, particular articles are bargained for between the letter and the taker, as to the system of crops, the modes of tillage, and the manure. But these are so few and rare, that nothing general can possibly be recorded satisfactorily on the subject. In one instance, the reporter has been informed of a large field permitted, or rather requested to be broken up, near a gentlemans residence, which was fallowed completely during two whole subsequent years; and having been thoroughly limed and dunged, was laid down again to grass with the immediately following crop. The circumstances of rent have not reached the reporter;

porter; but the field was immediately afterwards added to the farm occupied by the taker, under the restriction of continued pasture, and for the full endurance of his lease.

In another instance, eight pounds an acre were asked for a lease of five years; and seven pounds offered, and refused, for permission to break up a field of very rich loam, to be cultivated by a fixed rule, and laid down to grass with the crop of the fifth year. The prescribed course was to have been, 1. Oats from the lay. 2. Beans. 3. Wheat or Barley. 4. Turnip fallow, with 160 bushels of unslacked lime to the acre; the lime paid for by the proprietor of the land. 5. Wheat, barley, or oats, at the pleasure of the taker; and sown up with mixed ray grass and clover seeds, furnished or paid for by the proprietor.

In this case, the tenant was to have been allowed to remove the whole straw of all the crops, as no muck was to have been laid upon the land during the currency of this course of improvement.

Upon the whole, the circumstances of this subdivision of the arrangement of the plan are so very rare in Berwickshire, that the reporter has thus been obliged to notice them only partially by a case which did not take place. In such cases two most material circumstances ought to be very especially taken care of. 1. That the land in question shall be most effectually underdrained wherever necessary, and completely cleared from all sitfast stones; and this branch of the improvement ought uniformly to be done by the proprietor himself, as a tenant for a few years cannot be expected to lay out money upon permanent improvements; or at least a special bargain ought to be made on this subject

subject with the tenant, under strict specifications. 2. The tenant ought to be bound, that in the year of fallow or turnips, he shall give not only an effectual number of ploughings and harrowings, so as to reduce the land to perfectly fine tilth, but that he shall completely remove all vivacious weeds; and that if beans or peas form part of the prescribed course, they shall be drilled and efficiently hand and horse hoed. And the complete fulfilment of these stipulations should be carefully seen into.

When good soil, properly improved, has been laid down to grass, and has once become rich feeding land, it appears to the reporter that no rent can be afforded for it in tillage which will compensate to the proprietor for the after defalcation of rent which must take place, when it is again laid down to grass; at least so long as good pastures produce the rents which they have given in this county for many years past. This doubtless has induced some proprietors to throw more of their lands into grass, and may operate in time to overstock the market with that commodity: But, should that happen, the evil will naturally cure itself; and, when grass rents fall permanently off, proprietors will readily see their own interests in letting a portion for tillage.

CHAPTER

CHAPTER IX.

GARDENS AND ORCHARDS.

SECTION I.—GARDENS.

THERE are no circumstances whatever in the management of gardens in this county that merit notice.

SECTION II.—ORCHARDS.

THE climate of Berwickshire, especially towards the coast, is extremely inimical to orchards: Fruit trees throw out abundant blossoms, but generally produce very scanty crops; as the cold winds of May, generally from

from the eastern points, render much the greater part of the blossom abortive, and even nip the new set fruit. It has been suggested that, in Denmark, the blossoms of fruit trees are kept back, by covering the trees in the day time, and exposing them at night. In Holland, wall trees are carefully covered up during the night, and in frosty weather, by reed matts, and exposed in fine weather to the sun. Resident proprietors have gardens and orchards for the supply of their own tables; but hardly any are cultivated for sale. Small fruit, as gooseberries, currants, rasps, and strawberries, are sufficiently plentiful.

CHAPTER

CHAPTER X.

WOODS AND PLANTATIONS.

SECTION I.—COPSE-WOODS.

THERE are no copse woods of any importance whatever in the county, nor any considerable natural woods of any kind, so that nothing respecting their management can be furnished in this report. A very small number of the remains of ancient oak forests are to be found in a few places on the banks of streams among the hills, which have grown up into a kind of copse, or what is termed in Scotland *hag* woods. These are cut at different ages, from twenty-five to fifty years old, chiefly for the sake of their bark, which is sold to tanners; and any measurable trees are sold to farmers, joiners, and mill-wrights, for country purposes. The smaller wood, provincially termed *white-legs*, is sold for temporary fences, or fire wood. But the insignificant extent of these, and the unfrequent recurrence

recurrence of their sales, do not admit of recording any circumstantial details concerning them, which would be altogether uninteresting and uninstructive. No hoops, poles, hurdles, faggots, or charcoal, are produced from them. As they almost exclusively grow upon steep banks, they are generally fenced to allow them to grow again; and empty spaces are often filled up with young forest trees.

SECTION II.—BEECH, AND OTHER WOODS.

THERE are none in the county that can be considered as such, according to the arrangement of the plan for the reprinted reports.

SECTION III.—PLANTATIONS.

SEVERAL proprietors in Berwickshire have planted extensively; but numerous estates still remain destitute of that profitable embellishment, insomuch that the county may still be considered as naked. After the general inclosure which took place between 1750 and

and 1760, many proprietors planted the lands near their residences, with belts, clumps, and avenues, and some added the embellishment of hedge-rows; but their off farms, though inclosed and subdivided, either then or since, are still almost entirely destitute of trees. Large tracts in various parts of the county, and patches of various extent upon every estate and farm, might be appropriated to planting, without any diminution of rent, to the great embellishment of the country, the highly useful shelter of the farm land, and the future vast emolument of the proprietors or their successors.

It does not seem necessary to enlarge on the subject of plantations, as there are no circumstances in their management peculiar to the county, that seem worthy of recording, excepting one practise devised by Mr Fordyce of Ayton, a most spirited planter. When a piece of thin barren moor is to be planted, it is previously subjected to a summer fallow, and the scanty soil is gathered into narrow ridges or lands, from four to six feet broad, along the middle of which ridgelets the young trees are planted. By this simple, but ingenious, contrivance, their growth is much encouraged, both from the accumulation of soil, and by the amelioration, and cleaning of the previous fallow. The reporter has suggested, as at least worthy of experiment, to break open the stratum of stubborn till or moor-band, immediately below the crowns of these ridglets, by a very strong plough going once about, as deep as possible, before the ridgelets are gathered, on purpose to allow the roots of the trees to dip down into the subsoil, in search of food, and to acquire a stronger hold of the ground, to resist the wind. Hitherto the hint has not been acted upon.

1. In the older plantations, the Scots fir was the most prevalent tree, especially on the poorest soils, under the idea of its being indigenous, and therefore best adapted to the climate. But, besides that it is an unseemly tree, especially when old, by its long bare trunks, and sombre dark colour, the Scots fir seems extremely ill adapted for exposed situations and thin moorish soils, which are chiefly devoted to new plantations, and on which the larch appears to thrive much better. In the latter plantations, a considerable variety takes place, mostly in mixture, as Scots fir, larch, and spruce, with oak, ash, elm, beech, and birch. The reporter has very little experience in planting; but it appears that these random mixtures are improper, chiefly owing to the different habits of growth of various trees. Owing to this, it often happens that the less valuable kinds overtop and suffocate the slower growers; and this is most particularly the case with oaks that grow in mixed plantations. The reporter has seen a very strong instance of this, in an extremely thriving bank of wood, along a river side, of about 30 years growth, which seems to have been originally intended for an oak wood, but filled up with Scots fir, pinaster, ash, elm, and plane. The fir is now mostly weeded out; but the oaks are mostly suffocated, by other white wood trees having been allowed to overgrow them.

The best principle of forming plantations appears to be, that every particular soil and situation ought to be planted with that species of tree which is best adapted for it, at large intervals; filling up the ground with more common and cheaper kinds, to serve as nurses, and carefully weeding out these, whenever their growth

becomes the least injurious to the principal trees intended to remain.

2. It is not possible to give any accurate account of the expence attending the formation of plantations in Berwickshire, as this depends upon such a variety of circumstances, according to the expence of inclosure; and because many country gentlemen now very properly raise their own nurseries of young trees. With them, therefore, the chief expence is inclosure, which has been already mentioned.

3. The chief and almost only management of plantations, in the early stages of their growth, is judicious thinning, which can hardly be explained, as depending so much on judgment, experience, and inspection. One good rule is, to take care that their branches shall not interlace; as, in this situation, they must obviously prevent each other from receiving the full genial influences of the sun and air; and, as it is a generally received opinion, that the roots extend as far laterally as the branches, they must likewise, when too close, obstruct each other in the acquisition of nourishment from the soil. This rule must, however, have its limits with trees of different kinds, and that are adapted for different uses. In most kinds of trees, the boles or trunks are chiefly valuable for timber. In these it may certainly be proper to permit them to grow rather crowded, to encourage them to shoot upright. This, however, may likewise be greatly assisted by judiciously pruning off lateral arms, so as to enforce the production of a long main stem. In oaks, on the contrary, where crooked timber and knees, for ship building, are more particularly wished for, wide distances, to encourage lateral branches or arms, is adviseable. Yet,

as

as ships are not entirely built of knees and crooked timber, straight oak for planks and beams must have their full usefulness.

On this subject, however, the reporter must refer to the reports of other counties, where planting is carried on more largely, and more systematically than in Berwickshire; as he does not feel authorised to indulge in obtruding his own crude opinions in a work that ought almost solely to represent existing facts.

4. From the scarcity of plantations of any age or extent, there is no room in this report for any account of the profits attending plantations; and, therefore, for the reasons assigned in the concluding paragraph of the preceding subdivision, the reporter considers himself as not at liberty to indulge in any speculative views of the subject.

The present prices of home grown timber in this county, or rather those of 1807, before the foreign supply was interrupted, are as follows:

Oak,	from	2s.	0d.	to	4s.	0d. a foot.
Ash,	—	1s.	0d.	to	2s.	0d. ——
Elm,	—	1s.	3d.	to	2s.	0d. ——
Beech,	—	0s.	8d.	to	1s.	6d. ——
Plane,	—	0s.	10d.	to	1s.	0d. ——
Birch,	—	0s.	8d.	to	1s.	0d. ——
Lime-tree,	—	0s.	6d.	to	0s.	10d. ——
Firs, Scots and Spruce,	—	0s.	6d.	to	1s.	0d. ——

Larches have hitherto not been sold in sufficient quantities to be able to quote any price.

CHAPTER XI.

WASTES.

SECTION I.—MOORS AND MOUNTAINS.

THE reporter has used the freedom to conjoin the first and second sections of the chapter, because in this county moors and mountains may be considered as in a great measure the same: Not that there are no moors in the comparative lowlands, but because these lower moors, being mostly annexed to arable farms, have been improved comparatively, or are under a course of improvement, or will mostly, in the course of time, be converted into wood-land or plantations, where not considered worthy of being converted into arable land or pasture. Hardly is there a farm of any extent in the low country of Berwickshire, that has not some portion, of less or more extent, that is actually moorish, even in its present situation of very considerable improvement, or that conveys at least the certainty of its former moorish condition, by its present appellation. Upon the

the small farm of a hundred and thirty acres, occupied by the reporter, and situated in one of the best cultivated districts of the county, there are obviously moorish pieces of no inconsiderable extent, in no less than seven fields or inclosures, all distinctly indicated by the nature of the soil and subsoil, and by the ancient customary names, still remembered, that were applied to them before inclosure.

The extent of moor and mountain in this county has been already considered in Ch. 1. Sect. iv. where it has been estimated, rather loosely indeed, at nearly a hundred thousand acres.

If by wastes, in the plan for the reprinted reports, are meant unappropriated wild commons, hardly any such now remain in the county; all, or almost all, having been divided in absolute severalty, among those having interest, or are now under division, as already mentioned in the sixth chapter. Still, however, much of the moor and mountain remains entirely uncultivated, and almost waste to any useful purpose.

Upon the wretched moors and mountains, which were anciently common wastes, but are now appropriated in severalty, a few small cattle, and some coarse sheep, pick up a scanty summer pasture; but in wet seasons, the sheep are liable to the disease of rot, and in all seasons the sheep and cattle are sadly stinted in food and growth.

Yet are not the whole of these moors and mountains so extremely barren and unproductive; for large tracts of them are occupied in breeding sheep farms, as already mentioned in Ch. viii. Sect. ii. § 3. where the subject is referred, for more particular elucidation, to some other Scots reports, as more particularly adapted for

giving the information required on this head of enquiry. Yet some general account of the moors and mountains of Berwickshire must be given in this place; though it is not possible to reduce that account to the regular arrangement of the new plan for the reprinted reports. The principal particulars, however, of that arrangement, will fall to be incidentally explained.

A great portion of the moors and mountains are composed of heath. As the plants of heath, provincially named *heather*, become woody when old, only the tender shoots of one years growth being useful as food for sheep, it is customary to burn the heath once in three or four years. This encourages the growth of grass among the heath, by admitting the influences of the sun and air, and by the manure communicated from the ashes of the burnt heath; and it gives leave for young and tender plants of heath to spring up, in place of the old and unprofitable woody plants that have been burnt down. When allowed to stand unburnt for a good many years, heath is sometimes apt to disappear altogether, after the application of fire; which is often a misfortune on moors unfit to produce better pasture plants, at least for many years afterwards.

1. The present value of these moors and mountains in Berwickshire, is immensely difficult even to guess at; they are so extremely different in their natural qualities, and in their relative values, according as they are connected or not with better or improveable land, and according to elevation. Such as are merely capable of sustaining a breeding flock of the coarse mountain sheep, are seldom valued by the acre, but by the number of sheep they are capable of supporting; and even that

that circumstance is kept a profound secret by the tenants. According to the many causes of difference in value already alluded to, the moors and mountains of Berwickshire may probably vary in actual rental value, from so low as sixpence an acre, up to five shillings; while such as are susceptible of improvement, from better soil and less elevation, and greater convenience of bringing lime wherewith to improve them, may rise to ten or even fifteen shillings an acre.

2. Their application is hitherto almost solely to the breeding of a coarse woolled sheep, to be afterwards mentioned; but such as are in the better predicament alluded to in the close of the foregoing paragraph, support an improved breed of sheep, called half bred, which likewise will be afterwards attended to. Everywhere, however, a few cows of a very small breed and peculiar to the country, are kept by the farmers and their herds; but sheep adapted to the scanty sustenance, severe climate, and difficult declivities of the mountains, are the staple article of produce.

3. Large portions of natural upland pasture, both covered with heath and grassy, have been taken up and subjected to an improving course of tillage, with a good dressing of lime, and laid down again with artificial grasses, for permanent pasture; by which solid improvement, they have been enabled to produce a much larger quantity of food for sheep, and to afford it much earlier in spring; and consequently to support a larger stock, and a better breed of sheep. This great improvement has been much limited in its extension, by the great distance of lime from the interior hills, and by the want of good roads. This latter obstacle is gradually removing, and will fall

to be again mentioned in the first section of the 16th chapter.

Where these lands have been cultivated, drained, limed, and inclosed, and have not been afterwards exhausted, by injudicious cropping, under the grossly mistaken notion of making them repay the cost of improvement, they are not afterwards liable to revert to heath; but continue to carry permanent sweet grass, almost always having an admixture of white clover. The practice of liming the surface of heath and other upland pasture, which is said to have operated the most salutary effects in some of the hill districts of England, has not yet found its way into the moors and mountains of this county.

"There are instances in the county of moor lands, on a dry bottom, which, after having been well fallowed and limed, have been known to produce eight or ten bolls of oats an acre, 48 to 60 bushels, for three years successively. These are now overgrown with heath a foot high; and this change has taken place in the course of 25 or 30 years, which might have been prevented by well chosen tenants, and proper articles of management agreed upon in the leases. The lands here alluded to are situated on the edges of Lammermoor. But even in the Merse, or lower part of the county, there are several farms which have a great proportion moor land, which, after having been completely improved by fallow and lime, and let out at what was then considered a fair rent, have not since stood the rents affixed, owing to the falling off of these moor lands, notwithstanding the management having been tolerably good. On this account it may be said, that bad land cannot

cannot be too cheap, and good land can hardly be too dear rented."—A. L.

In the hilly district, certain portions of the most grassy parts of every farm, usually soft moist land about springs, and along the sides of rills and rivulets, are set aside yearly for hay, provincially called *hained*; which hay is applied to support the sheep stock during a long continuance of snow. These patches are usually surface drained, by shallow open cuts, often run by the plough, to prevent a species of natural irrigation, which is known to render the grass hurtful to sheep stock, when under pasture, in early spring, or in autumn, by inducing the disease of rot. In the course of improvements, the first year of the artificial or sown grasses, are mostly set apart for the production of hay.

Large tracts of unimproved upland moor or heath, and green hill and moss, still remain all through Lammermoor and Lauderdale; but these are lessening every year in extent by the progress of improvement, which chiefly and naturally follows the lines of road that have been carried through the hills in various directions. This is a most powerful argument for extending and improving these lines of roads, in every convenient direction, for the introduction of lime.

In most sheep farms in the hills, shelters of various kinds are made, to which the sheep may be driven in severe falls of snow. The original and most simple of these consist of three high walls or mounds of turf or stone or both, meeting in one point, and forming three equal angles, one of which must always be a *lee* shelter. Others consist of square or oblong plantations of Scots fir. Owing to the former kind forming a sort of star, it has from time immemorial been denominated a *stell*, from

from the Latin *stella*; and that name is generally applied to plantation shelters, because they serve the same purpose.

In the low country some portions of bad moor still remain unimproved, and even several attempts to improve some of these have been abandoned, the expence having far exceeded the proportional amelioration. Time and the extension of agricultural capital, will, however, gradually get the better of such of these as can, with any probability, repay the farmer for his trouble and outlay; and such as are unsusceptible of profitable agricultural improvement, will probably be applied to profit and embellishment by planting.

Having thus extended these general observations upon the improvement of moor and mountain land in this county, the detail of particulars, according to the new arrangement, will require very short discussion: 1. The inclosure of these lands has hardly been yet attempted, though all are in perfect severalty. On this subject the reporter begs leave to refer back to chap. 6. sect. 2. where this subject has been already discussed. 2. Paring and burning, an old practice in Berwickshire, has been laid aside for many years. 3. Liming has been already mentioned as the best mode of reclaiming moors, wherever the soil is of sufficient goodness to warrant the expence of improvement, and where roads admit of its being brought to the land. 4. The culture of these lands, with a view towards improvement, has been already detailed in several preceding parts of this report, and particularly in the prefatory observations in the present subdivision of this section. It is chiefly thus, after breaking up with a crop of oats, a complete fallow, or a turnip crop thoroughly reduced and cleaned, and well

well limed; this succeeded by a crop of oats, barley, or big, and laid off with a mixture of ray grass seed, and clover, especially white clover. 5. The application of the improved grass land is invariably to the sheep stock, partly in the shape of hay for carrying through winter, but chiefly in pasture. The turnips, cultivated during the improvement, are applied likewise to the sheep stock, in various ways, partly to feed off part of the old ewes and wedders, and partly to carry on the rising young stock of sheep and cattle. And it has been already said, that the most favourable portions for tillage, of such improved farms, are carried on in a regular system, so as to have every year as much in turnips as the farm manure can go over. 6. It is quite impossible to give any average view of the profits attending the improvements of such situations, as dependant upon such a variety of complicated circumstances, in soil, elevation, distance of manure, and judicious management. In some cases improvement may have cost twice its value, while in other cases land not worth a shilling an acre, may have been raised to the value of 15 or 20s. rent, at a moderate expence, with every possible intervening gradation.

This subject has been already generally discussed in chap. 8. sect. 2. § 3. in treating of natural sheep pastures.

SECTION

SECTION II.—BOGS, FENS, AND MARSHES.

As none of the bogs or peat mosses of this county have hitherto been subjected to culture, and as there are no fens or marshes in its whole extent, these two sections are here thrown together, merely to say that the county affords no topics of discussion on any of these subjects.

SECTION III.—FORESTS.

In ancient times the Crown of Scotland had an extensive forest in the north-eastern extremity of this county; and the hereditary office of forester of the forest of Coldingham still exists, and derives some trifling dues from all inhabited houses within its boundaries and purlieus. The principal of these is called *reek* hens, being a yearly exaction of a hen for each chimney. For this the inhabitants had formerly a right to certain small timber from the forest, for their husbandry

dry utensils. This right has abated, because trees no longer exist in the forest, and its whole surface has become private property, yet the exaction remains.

A very large extent of waste moor, already mentioned as extending to about 6000 acres, is still named Coldingham moor, and was part of this forest. It was common to all the surrounding estates till the year 1777; and upon its outskirts there are strong grounds to believe these estates had formerly made considerable encroachments. At that period, as already stated in chap. 6. sect. 1. it was divided among the surrounding proprietors, though most of it still remains uninclosed, and mostly uncultivated. Several names of places, in and round this moor or forest, are thought to be derived from circumstances connected with its ancient forest state, as Press, which is said to signify a wood, Swinewood, Houndwood, Buckingburn and others.

The quality of the soil of this very extensive moor almost forbids any attempt at improvement; and several spirited endeavours for this purpose, soon after its division, were followed by complete failure, and loss of all the expences incurred, without any perceptible amelioration. It might probably be converted to very great eventual profit by planting. Some trifling plantations have not succeeded, probably from want of shelter and sufficient fences. But if planted in large breadths for mutual shelter, and securely fenced against cattle and sheep, it might certainly produce a vast supply of timber; and being near the sea ports of Eyemouth and Dunbar, the wood could be removed with great facility, especially as it is pervaded from end to end by an excellent public road. In its present state Coldingham moor, and vast extents of other moors in the county, are

not

not now worth 2s. an acre of average rent, and are next to unimproveable to any possible profit, consequently do not exceed L.5 an acre in absolute fee simple. If planted with forest trees, and thoroughly secured by substantial fences, till the trees get beyond injury from sheep or cattle, they might probably carry timber to the value of at least L.500 an acre, at the end of 60 or 80 years, besides amply repaying all outlay and rent, and first purchase, in the intermediate period. There are probably from 15 to 20,000 acres of land in the county that might be thus much more profitably employed than in any other way whatever, which in less than a century would produce from seven to ten millions in timber, without infringing upon any of the productive or improveable land of the county; a sum much exceeding the present purchase value of the whole county.

SECTION IV.—HEATHS AND DOWNS.

THE subject of this section might have been consolidated with the first section of this chapter, as nothing of either kind exists in this county, which can be separated from the moors and mountains, or natural sheep pastures. In some places along the sea shore, and likewise along some of the rivers in the low country, very steep banks occur, that are absolutely incapable of tillage, and which may in some measure be considered as analogous

analogous with downs. These are uniformly allotted to the several farms with which they are contiguous, and are occupied by sheep.

1. In this connected, and as it were intermixed state, it is impossible to estimate their value separately from that of the farms to which they belong, and in which state they are considerably more valuable than they could be as separate possessions. According to circumstances of soil, or as they may be encumbered or not with whins or rocks, their value may run from 5s. to a pound the acre of yearly rent, reduced to horizontal measurement, though many of them are not worth half the lesser sum.

2. The only improvement of which these are susceptible, is by removing whins, which is almost a yearly work, as tillage and manuring by lime, muck, or marle, is altogether out of the question. The worst, especially along the rivers, are excellently adapted for the sites of plantations.

3. None of these being of any important extent, and all of them connected with arable farms, the quantity of sheep they now maintain, and the increase that might take place from any trifling improvement they are susceptible of, cannot be appreciated.

CHAPTER

CHAPTER XII.

IMPROVEMENTS.

SECTION I.—INTRODUCTORY REMARKS.

BEFORE proceeding to the several sections of this chapter, as pointed out in the plan for the reprinted reports, some general account of the introduction of the modern improved husbandry into Berwickshire may be premised. The history of the drilled turnip husbandry, at its origin on the border counties, has been already adverted to in the 7th chapter of this report. Among some valuable communications from Mr Low, the original reporter of this county, with which he has in a very liberal manner favoured the present reporter, the following general account of the commencement of our improvements is included, which is here given in his own words.

"The first brilliant examples of improvement in Berwickshire were given by the great and middle proprietors. Some of the operations of these early improvers, which commenced between 1750 and 1760, were

at the time so great as to be considered inimitable, by the lesser proprietors and tenants. Most of these gentlemen, first improvers of the country, are now gone; and while we give a just tribute of praise to their memory for the example they set, we are sorry we cannot affirm that they and their heirs have been great gainers by their exertions and outlay of money. At a great expence, they, in some cases, doubled, and even trebled, their rents. Many gentlemen have since done the same, without laying out one shilling on the improvement of their farms. The improvers got the high rents perhaps 20 or even 25 years sooner than the others; but it is strongly suspected that the sums lost, and expended on the improvements were fully equivalent to the rise of rents which they thus obtained. Having no clear accounts before us to place this matter beyond doubt, we can only suppose a case not unlikely to have happened in the circumstances we are now considering.

"Supposing L.7000 to have been expended upon the improvement of an estate, and to have raised the rental L.500 a year beyond the natural rise of the times, this would be considered, perhaps, as good interest for the expenditure. But if the proprietor had been told, or could have foreseen, that this rise of L.500 would have come round in 20 years, without any outlay, he certainly would have been a gainer by retaining the money in his pocket.

"We recollect a case in point, not founded on supposition, as the accounts came under our own review. A gentleman of this county took most of his estate into his own hand in 1758; and went on farming and improving for 25 years, at the end of which period his

rental was increased to the amount of L.1800 yearly: But he had expended L.15,000 on the improvement. It was believed that the natural rise of rents, without any expenditure whatever, on these lands, would have been L.800 in the same period, and that well chosen tenants would have increased the rents as much in the same time, without any improvements having been made by the proprietor.

"There are many instances in the county in which the more silent, but well directed, operations of the tenants, even coeval with those of the improving gentlemen, have trebled the farm rents in the course of 25 years, so that the farmers are justly entitled to their share of praise."—A. L.

According to Mr Bruce, whose observations on Berwickshire rural affairs were published along with the report of Mr Low, about the 1730, Mr Swinton of Swinton, or of *that ilk*, father of the late Lord Swinton, and grandfather of the present Sheriff of the county, drained, marled, and completely inclosed his whole estate. Nearly about the same time, Mr Hume of Eccles did the same. Both of these gentlemen were actuated by the example and acquaintance of Mr Cockburn of Ormiston, in East Lothian, the leading agricultural improver of Scotland. Henry Home, Lord Kaimes, was one of the early improvers of this county, about 1746, at Kaimes, now Besborough. About 1750 the ardour of inclosing and improving the land spread among the Berwickshire proprietors. Without presuming to ascertain their comparative dates or merits in this patriotic employment, the following gentlemen may be mentioned as spirited and early improvers. The late Mr Renton of Lammerton, the late Mr Home of

of Ninewells, the late Mr Molle of Mains, the late Dr Hutton of Sleigh-houses, the late Mr Lumsden of Blanern, and Mr Fordyce of Ayton, the only survivor of the above meritorious list of improvers, and who still continues his exertions for the improvement and embellishment of his estate, with great judgement and perseverance, and unabated ardour.

It is impossible to particularize the many highly respectable farmers, who have contributed largely to improve this county, and to carry its agriculture to its present high state of perfection in all the branches of rural economy. Without, therefore, attempting any selection, which might, perhaps, seems invidious, it may be allowed to say that the late Mr George Logan in Fishwick was among the earliest of the farmers, if not the first, who exercised the profession of husbandry in this county, on a great scale, with united spirit, judgement, and success. It would require a long list to enumerate the Logans, Johnstons, Thomsons, Hogarths, Cockburns, and many other highly respectable names and families, who have flourished, and who still adorn the profession of agriculture in Berwickshire.

SECTION II.—REMOVING STONES.

BEFORE a field can be cultivated to any effectual purpose, all large stones, that would otherwise interrupt

the operations of the plough and the harrow, must be removed. In many situations of this county improveable land is, or has lately been, much encumbered by such stones. These are sometimes large nodules, or irregularly globular masses of whin, trap, basalt, or granite, either appearing above the surface, or discovered by the plough, and are called *sitfasts*. Sometimes these may be reduced to manageable fragments, by means of the quarriers mattock, aided by wedges, or by a heavy stone hammer, or by kindling a fire of furze around them, which occasions some kinds to split into moderate fragments. The fragments of these stones become useful for stone fences, for filling hollow drains, or for road materials. When they cannot be broken in pieces conveniently by any of the foregoing methods, they must either be blown by gun powder, or each large stone may be overturned into a large hole dug sufficiently deep to burry it beyond the reach of the plough.

Occasionally the strata of the common rock of the country reach the surface, or rise so near as to obstruct the plough. These must be quarried out to a sufficient depth, and then covered over with earth, to admit the tillage operations. More moderate sized surface stones are occasionally gathered from the surface, especially of grass land intended to be mown, and are carried off for road making, or for filling hollow drains.

SECTION

SECTION III.—DRAINING.

1. Elkingtons method of draining has not hitherto made its way into this county, and does not therefore fall under consideration in this report.

2. Having no fens or marshes, the system of draining these, by open cuts, has no place in this county. In marshy places of the sheep pastures numerous shallow open cuts, from six inches to a foot deep, are often drawn by the plough, and cleared out by the spade, to prevent a species of natural irrigation, which renders these places very prejudicial to sheep, as has been already noticed. Such open cuts as are occasionally requisite in the system of hollow draining, will fall to be mentioned under that head immediately following.

3. The proper planning and efficient execution of hollow drains must depend upon a thorough knowledge, and most attentive consideration, of all the circumstances of the spot to be drained, particularly as to the direction of the main drains for carrying off the water, and the disposition of the collateral drains for collecting the water, so as best to secure the purpose intended, and at the smallest expence. Not being an operation at all peculiar to Berwickshire, nor originating there, it does not seem necessary to give a regularly detailed treatise on the art of draining, more especial-

ly as several useful publications on the subject have appeared of late years, and as the system here pursued seems much the same with that followed in Norfolk, so far as the reporter can judge by comparing what he has seen and practised here, with agricultural publications respecting that celebrated county: Yet a short notice of the general system pursued in this district may not be improper.

The fence ditches, into which the main drains are to discharge the collected water of the field or piece to be drained, are first scoured out effectually. One or more main drains are then dug, leading from the lower ditches to the spot or spots to be drained; and it may be remarked that a gentle declivity answers much better than a rapid descent. In the former the water finds its way with sufficient ease, and glides gently among the stones with which the drain is afterwards filled, while in the latter, rushing rapidly, it carries sand and gravel in its course, which lodges at every turn or slight obstruction, by which the drains get blocked up and burst open, forming quagmires that require new draining operations to cure.

If the springs are distinct and circumscribed they may be made to communicate directly with the main drains, which must of course be proportioned to the quantity of water they have to carry off. Collateral side cuts are made in all necessary directions, for catching and carrying off the water that oozes among the soil. In general it is a good rule to circumscribe the upper edge of what may be termed the diseased land, cutting off by a drain, between the upper dry land, and the lower spouty or wet part, all the springs and oozings which produce the disease. After which, by properly

properly directed cross and diagonal cuts, to lead all the moisture which can be collected into the main drains. No general rules can be devised for the conduct of this operation, which must be directed and carried on by the joint ingenuity of the farmer and his labourer, reasoning on the spot from the immediate appearances, and guided and corrected by experience. Frequently the most experienced drainers fail, less or more, on first going over a field, and must correct errors and omissions at a future convenient opportunity, by opening additional collateral cuts and branches, wherever necessary, into the first made main drains.

Where the main drains are of great extent, and have to carry of large quantities of water, they are sometimes left open; and, in this case, are drawn as nearly as possible in straight lines, to suit the cultivation of the field.

The branches and collateral cuts are usually dug two feet and a half deep, and about nine inches wide at the bottom. Eighteen inches of this are filled up with land stones, or, in defect of these, with quarried stones broken down. The stones are laid in promiscuously, without any order, except as to the quantity, which is preserved as uniform as possible. They are covered first by a thin layer of straw, to prevent the earth from crumbling in among them; and the whole is covered over by the earth that was dug out in forming the drains. In filling up, the rule is to begin by the highest drains, and to proceed regularly downwards.

The depth, especially at springs, and where real bogs or quagmires are to be drained, must be regulated by the situation of the water, and the nature of the bogs, and will generally require considerably greater

depth than mentioned above, as the substance of the bog subsides very materially after it is laid dry. A good rule, if possible, is to penetrate through the diseased ground, whatever its nature, to a firm bottom, and even to cut the water run in that strong subsoil if possible.

For filling drains in deep boggy land, the cuttings of old thorn hedges make a much better material than stones, as not nearly so liable to sink into the inferior spungy part of the bog. In bogs, the operation of draining will often require to be repeated in successive years, as the bog subsides, before it can be made effectually sound and dry.

The almost universal material for filling hollow drains, in this county, is stones, either gathered from the surface of grass or fallow land, or from the beds of rivers, or quarried and broken for the purpose. These are for the most part filled in at random; in which case the hollow drains are provincially named *rumbling cundies or syres*, corrupted from conduit and sewer. Sometimes a kind of low wall is built on each side of the bottom of the drain, four to six inches broad and high, and covered by some of the largest stones, which are then covered over as before. These, which are seldom now used, are termed open conduits. Where stones are scarce, or in deep boggy ground, the cuttings of old thorn hedges, as already mentioned, are often used to advantage. In some strong clay lands, with tough clay subsoil, turf drains have been made with great benefit and success; but are by no means general or even common.

Upon stiff clay soil, with a tough clay bottom, the employment of the Mole plough, as now used in some parts

parts of England by machinery, might prove of most material benefit, converting these, in a great measure, into the nature of free loam. But, having no direct experience of its use and advantages, the reporter does not feel warranted to exceed a mere hint on this subject.

In his own limited practice, the reporter has successfully applied what is called the *Essex* mode of draining, upon some pieces of soft land upon a retentive subsoil, by which they were formerly kept wet, as the subsoil retained the surface water, though entirely free from springs. In this operation, parallel drains were drawn, about two and a half feet deep, at every five yards distance, all leading into a main drain, or into fence ditches. The first course was dug by the common spade; the second by a spade only about four inches wide below; and the third by one that tapers to two inches. Shovels fitted for the width of each course, clean out the crumbs. In this mode of draining, little more than a third of the ordinary materials are required for filling up; but the main drains, especially where there is a considerable quantity of water to carry off, must be made of the full ordinary size of the country, already mentioned.

By this Essex mode, nearly four acres upon the reporters farm, have been reclaimed from sour unproductive land, to sound, dry, and fertile turnip soil. Unfortunately no accurate account was kept of the actual expence, so that nothing but estimate can be resorted to in this place. One acre, drained effectually in this manner, will require about 160 roods of drains, of 18 feet each; which may be dug for threepence a rood, with the Essex tools. The gathering, carting, and filling

ing in the stones, and covering over the drains, may cost about ninepence more; so that the whole operation may be effected for one shilling the rood, or eight pounds the acre.

The difference between the value of the produce of the first three or four years after draining, and of what it could possibly have produced before, will in general amply repay the whole expence.

In the common mode of draining, as followed in this county, no estimate of the expence per acre can be hazarded, as that must entirely depend upon the number, or frequency, of the drains, that are found necessary to reclaim the piece of land which requires the improvement. But, both as requiring more work to dig or open up the drains, and a vast deal more stones for filling them again, the expence by the rood will be about eighteen pence, or nearly a half more than by means of the Essex tools; and if extended to the same quantity or measurement of drains, as in the Essex mode of draining, may amount to twelve pounds the acre.

The plough is not used in this county for draining, except so far as has been already mentioned in regard to the shallow surface drains, on wet places of the sheep pastures. Yet, especially in the Essex mode of draining, which chiefly follows the regular furrows between the ordinary fifteen foot ridges, it might certainly be adviseable to open up the first course, by one bout of the plough, casting the earth outwards, going and returning; by which probably one penny a rood might be saved, or thirteen and fourpence an acre, in manual labour.

4. Draining is assuredly one of the most material operations of improvement, which can be given to land whether

whether for tillage or pasture: And when judiciously planned, and faithfully executed, repays trouble and expence with very great liberality; as it often immediately converts the most completely unproductive fields, and waste parts of fields, into the most fertile land. It is, in fact, the *sine qua non* of all good husbandry and all judicious improvement; as, unless the soil be laid previously dry, either by proper disposition and shape of the ridges and water furrows, or by under-draining, or both where necessary, it is needless to expend lime and muck upon the land, for both will fail to produce any proportional effect.

SECTION IV.—PARING AND BURNING.

In old times, before the introduction of the modern improved husbandry, this operation was common in Berwickshire, and even within memory, chiefly to enable coarse grassy lands to carry a few successive crops of grain. From the very improper use that was made of the extraordinary temporary fertility which it produced, enabling the land to give out repeated crops of grain in succession, whereby the soil became excessively exhausted, it has long fallen into disuse, and is now no where practised within the county, and does not, therefore, fall within the object of this report.

"A

" A gentleman, in the lower part of the county, who began the improvement of part of an extensive moor many years ago, by paring and burning, assures us, that it has not produced so well, in an after course of liming and cropping, as the moor land of the same kind which was improved by fallow and lime only, without having been pared and burnt."—A. L.

It may be remarked in this place, that the old Scots husbandry seemed anxious to seize every opportunity of exhausting or overcropping the soil, through the effects of paring and burning, liming, and folding; while the new husbandry follows the more rational and more profitable system of continual amelioration.

SECTION V.—MANURING.

THIS section cannot contain more than a very small number of the articles mentioned in the arrangement of the plan for the reprinted reports; as by far the greater number of manures there enumerated are unknown in this county, except by name. The reporter will be forgiven, therefore, for having arranged these, in the order of their importance, or connection with ordinary farm management. As there is nothing very material in the Berwickshire management of manures, they shall be treated with all convenient brevity.

1.

1. Muck, or farm-yard manure, is for the most part carefully prepared, before it is applied to the land, by turning it over in the fold yards, after Whitsunday, when the stock has been sent out to graze; or it is carted out into heaps, near the place on which it is afterwards to be laid. If too dry for rotting properly, owing to very dry winters, water is often thrown over the heep, or *midding*, to encourage the proper degree of fermentation or putrefaction; and near the sea, salt water is found to produce this effect in a superior degree. This, however, can hardly ever be necessary, when the wintering cattle are allowed a moderate quantity of turnips; and it is fully ascertained, by long experience, that muck, produced from well fed cattle and horses, is vastly more valuable and more fertilizing, than when produced by half starved animals, living solely on straw. Hence the great importance of oil cake feeding in Kent, for supplying highly fertilizing muck to the hop grounds.

A very convincing proof of the superiority of muck from well fed cattle, over what is produced by lean cattle merely kept alive through the winter on straw, occurred to the reporter several years ago, on going over the farm of an acquaintance. Of two fields of turnips of equal soil, equally well tilled, and equally manured as to quantity, one was an excellent full crop, while the other was miserably scanty. In course of conversation on the probable cause of the difference, it turned out, that the good crop had been manured from muck produced from the farm stables and feeding shades; while the contemptible crop had received its muck from a separate fold-yard, where the young cattle and horses of the farm had been wintered upon straw alone.

Muck

Muck is laid upon the land with great economy, spreading it out as equably as possible, and it is covered up with all convenient speed, to prevent the evaporation of its more volatile parts.

It is never, in the practice of this county, used in a long or fresh state; so that no comparison can be instituted upon that head of enquiry. It is always wished to be in a soapy state of soft adhesion; in which the shape and organization of the straw remains perceptible, but quite tender. When completely rotted, into a dry crumbly mass, it is supposed to have lost a vast proportion of its fertilizing qualities, and to be reduced nearly to the state of extremely rich mould or fat earth, not unlike good black peat or turf.

To investigate the nature and properties of muck and the ingredients which it contains, that are applicable to the food of plants, would require a lengthened chemical disquisition, which the limits of this report does not allow, and which seems not called for in a work of this nature. This subject will be found fully discussed in a most masterly manner and luminous order, in the Systeme des Connoisances Chymiques, by the celebrated Fourcroi; affording a most excellent foundation for a useful and satisfactory theory of vegetation and agricultural amelioration or improvement.

It has been suggested by a very intelligent person, that recent experiments have proved, that dung or muck cannot be used too soon after it is made, and the fresher the better. This is contrary to the experience, or at least to the practice of the Berwickshire farmers; but may merit their particular attention by instituting careful

careful comparative experiments on this interesting subject.

2. The use of town manure, in this county, is very much limited in quantity, as the towns and villages are but few, and of no great extent. Its use is farther limited to very moderate distances from the towns at which it can be procured, unless merely as back carriage, in the carts which have delivered grain. Some spirited farmers have driven large quantities of street dung and coal ashes from Berwick, even six or seven miles, on purpose to bring their lands into good condition, at the commencement of leases. One farmer near Eyemouth, who is likewise owner of a coasting vessel, has even brought several cargoes of muck from London, instead of ballast.

3. Lime is a most especial foundation of the improved husbandry of this county, into which it is almost all brought from the south side of Tweed, at great expence, or is landed at the port of Eyemouth from kilns on the coast of Northumberland and Durham. The ordinary allowance to the acre of land, which has not been recently limed, is from thirty to forty bolls of lime shells unslacked, each containing about four Winchester bushels; and consequently from a hundred and twenty to a hundred and sixty bushels to the acre. Before laying on the land, it is allowed to slack in the air, so far at least as to fall to powder; or it is sometimes slacked by water led for the purpose. When in a powdery state, it is equably spread over the land from the carts by shovels.

Including first purchase, carriage home, and spreading, lime may fairly be reckoned to cost on an average half a crown the boll, or sevenpence halfpenny the bushel;

bushel; so that the expence of liming an acre of land will amount to from three pounds fifteen shillings to six guineas, or five pounds on the average. Hence, to go completely and effectually over a farm, of six hundred acres, may fairly be said to cost the farmer three thousand pounds; and on most farms the operation has to be repeated once during a nineteen years lease, at an expence of six thousand pounds; averaging about three hundred pounds yearly on the farm, or ten shillings yearly on each acre.

On the first introduction of liming in this county, a much smaller quantity was found efficient; and from twenty to thirty bolls was then usually given. But experience shews that, on repetition, the dose has to be increased. And in East Lothian, where liming has been much longer generally established than in Berwickshire, eighty bolls, at the probable expence of about ten pounds the acre, are said to be now frequently given. In that county, the lime is now often formed into a compost, by mixture with earth, either the surface of a thick soiled head land, or gathered from old hedge banks, road-sides, and the scourings of fence ditches. But as that practise has not made much way hitherto in this county, no particular account can be given of its effects, which are said to be highly beneficial.

Indeed, since the first draught of this report was written, considerable progress has been made in this new manner of applying lime, mixed with earth into a compost; and from its evidently useful effects, it is every year gaining ground. Farmers in every corner are seen anxiously collecting good earth from every accessible source, and forming it into composts with quick-lime; which,

which, when intimately mixed, they spread over the land.

Immediately after the lime is spread upon the land, it is harrowed to mix it with the surface soil, and the crop is sown. Lime is used in any period of the customary rotations, according to circumstances or conveniency; but an opinion prevails, that the nearer it is to the grass clod, or the sooner after the land has been ploughed out from lay or pasture, it is so much the more effectual. It is very commonly used upon fallow, or with the turnip crop, just before sowing.

An opinion prevails, that lime is not a manure, properly so called, or that it gives no direct contribution towards the food of plants; and that it only acts as a stimulant, or cause of exertion of the fertility, or vegetative nourishment, already in the soil, by facilitating the decomposition of the remains of decayed vegetables, so as to fit these to become the pabulum of vegetation, or the food of future crops. Founding on that theoretic opinion, and from consideration of the very improper use which was once made of the fertility produced by liming, in cultivating successive crops of grain without intermission, lime was once considered as a most injurious exhaustor of fertility; insomuch, that there are well authenticated instances of the employment of lime having been prohibited by very judicious landlords, before its proper application, and the judicious subsequent mode of cropping was understood.

That lime acts in both capacities is highly probable. As a real manure, or food of plants, there can be no doubt; because lime, or calcareous matter, in various states of chemical combination, is well known to constitute a part of the elements, or component parts of

vegetables; and, therefore, when lime is supplied to soils that are deficient in that earthy material, it must certainly contribute so far to the nourishment of the vegetables which that soil produces afterwards. It may likewise act as a stimulant, by contributing to decompose the remains of decayed vegetables in the soil, which are chiefly composed of carbonaceous matter, which is singularly imperishable and insoluble, without the employment of chemical agents.

From these considerations, the reason why the repetition of lime on the same soil does not produce equally beneficial effects may be readily understood. Being very slightly soluble in water, and, therefore, as a long while must elapse before all the calcareous matter, communicated to the soil by a first liming is expended, any additional quantity cannot be expected to produce very obvious effects as manure. Likewise, as land, that is well cultivated, will not accumulate any quantity of effete carbonaceous matter, subsequent doses of lime cannot have much of that dormant matter to act upon, in the way of stimulant, or chemical agent of solution.

One of the principal and obvious effects of liming is, the production of larger quantities of straw, by which, of course, larger subsequent abundance of muck is procured; and it likewise very much encourages the growth of clover and ray grass.

4. There are two, or perhaps three, substances that are known by the name of Marle, and which are, or have been used, as manures, in Berwickshire. Clay marle, stone marle, and shell marle. The two former, which are probably very much of a similar nature, only differing in degrees of hardness or agglutination, were formerly

formerly very much employed, at the commencement of improvements. But from the very large quantities that were required to produce much benefit, its consequent vast expence, and the greatly more speedy returns of profit from the employment of lime, these marles have now fallen into utter neglect; consequently all that can be here said of them is merely historical.

In the original report of this county by Mr Low, the following estimate of the comparative expence of manuring with clay-marle, and with lime, as in the year 1794, are given; and the comparison is here farther extended to the year 1808, to suit the alteration of circumstances, in regard to the price of labour, since that former report was composed.

Expence of *marling*, at the rate of 600 cart loads per acre.

	1794.	1808.
Employment of 3 carts at 4s. a-day	12s.	at 7s. 6d. L.1 2 6
3 labourers to dig and fill at 1s.	3s.	at 2s. 0 6 0
One ditto, to spread	1s.	0 2 0
Expence of one day	16s.	L.1 10 6

For this expence, 120 loads may be dug, carted, and spread, without estimating the charges of clearing the pit or quarry, or the surface damages. Five times this quantity, or 600 loads, is the full allowance for an acre of land; which, at the rate of 1794, would cost four pounds; and at the rate of 1808, would amount to L.7. 12s. 6d. for each acre.

The expence of liming one acre fully, supposing it brought from an average distance of twelve or fourteen

miles, may be estimated as follows, for the same years 1794 and 1808:

	1794.				1808.			
Purchaſe of 50 bolls at the kilns, at 7d.	L.1	9	2	at 7d.	L.1	9	2
Driving home 10 cart loads,	4s.	2	0	0	7s. 6d.	3	15	0
Spreading on the land - -		0	2	6		0	5	0
Expence of liming one acre -	L.	3	11	8	L.	5	9	2

Thus, in 1794, the expence of liming one acre was very little less than that of marling. Yet, even then, lime fully acquired the preference in the experienced estimation of the farmers in Berwickshire. In the present time, the difference of expence in favour of lime is very important, being L.2. 3s. 8d. an acre, or L.1310 upon once going over a farm of 600 acres; besides the very extraordinary additional employment of men and horses required for the purpose of marling; which are not now to be procured, almost at any expence, for extraordinary work, without hire considerably beyond what has been calculated upon, as for the year 1808. It is also to be observed, that from the improvement of roads, and the adoption of single horse carts, considerably more lime can now be brought home at one journey than in 1794. But this latter, it is believed, is fully compensated for, by the more rigid measurement now given to the lime at the kilns.

It is farther remarked by Mr Low, that a great proportion of the land, which is conveniently situated for manuring with clay marle, had been once gone over many years ago; and he adds, that it has not been found to answer beneficially a second time, nor on land that has been limed. He likewise alleges, that much of

of the good effects, supposed to have arisen from the use of marle, may have been imaginary; as a great deal of the substances used under the name of marle did not contain any calcareous matter, and some of the very best does not contain above fifteen parts in the hundred. He, therefore, is disposed to attribute the good effects which were perceived from the practice of marling, partly to the mere addition of substance to the soil, and greatly to the benefits derived from a thorough fallow, which was employed for mixing the adventitious matter with the original soil, at a period when fallows were not in universal use.

"The lands that were first improved by clay marle bore better crops of grain, and still continue, at the distance of 30 or 40 years from the original improvement, to carry better grass than those lands which were improved by lime only. Add to this, that lime answers well on land that has been first improved by clay or rock marle; so that, on the whole, we may venture to assert that it is more for the interest of the proprietors to encourage the improvements of their lands, especially those of a weak cast, with clay marle than with lime."—A. L.

In a former part of this report it has been already hinted, that a considerable extent of what is now termed useful land in this county, is said to have been reclaimed from thin surfaced moor by the use of clay marle. This will appear highly probable, when the large quantities of marle applied to the acre are considered, by which three or four inches may have been added to the depth of the original soil; whereas a complete liming does not, probably, augment the depth

of the soil, to which it is applied, above the twentieth part of an inch.

Shell marle hitherto has only been found in the most westerly parts of the county, at Merton, on the north side of Tweed, at least in such quantities as to contribute to general use. At the bottom of a large moss, the field, or stratum, of marle is said to be ten feet thick, and to extend over an hundred acres. Supposing a cubical yard to form one cart load, and that 40 cart loads are sufficient for manuring one acre effectually, this deposit under Whiterigg moss, may go once over 40,000 acres, and, at one shilling the cart load, may produce L.80,000; a probable vast benefit to the proprietor, Hugh Scott, Esq. of Harden, and to the neighbourhood, which is, in other respects, at a great distance from calcareous manure. Shell marle is said not to operate with so much quickness as lime, but to be a very effectual, and considerably more permanent improvement. It is used at the same periods of the tillage processes, as has been already mentioned, in regard to lime, and with the same objects.

5. The use of sea weed, otherwise called sea ware, or wreck, or vareck, is necessarily altogether confined to the immediate neighbourhood of the sea coast, and can only be procured there in particular places, where the shore is accessible, a very large portion of the coast of Berwickshire being composed of abrupt lofty precipices, with very scanty sandy, rocky, or stony beach below these. Upon some farms, roads have been formed at great expence, to descend most tremendous crags to the shore, in quest of sea weed. Some of these roads are only practicable for horses, which carry up the sea weed in panniers, baskets, or *creels*, having false bottoms

bottoms for delivering the weed upon the land, by drawing out a peg. Others of these roads are made of sufficient width to admit of carts.

Experience has long proved that sea weed answers best, or rather exclusively, when laid upon the land in its freshest state, immediately as it comes from the shore, and that it ought to be spread out without any delay. The reason of this will sufficiently appear in the following account of some of the properties of this substance.

An idea long prevailed that the beneficial effects of sea weed as a manure were derived from the *salt* which it was supposed to contain. This opinion certainly arose from the circumstance of this manure being procured from the sea, and from the old fancy that salt and oil were the fertilizing ingredients, or elements of manures. From a series of very ingeniously devised and accurate experiments, instituted on this subject by Sir James Hall of Dunglas, it was clearly ascertained that the whole contents of sea weed, capable of acting as manure, consist of a large quantity of gluten, very easily soluble in water, and extremely analogous to animal glue; and that any small quantity of sea salt it may contain, is hardly more than may be conceived to arise from the sea water that adheres to its surface.

Owing to the extreme solubility of that gluten in cold water, the efficacious part of the sea weed is very easily and speedily washed out by rain. This points out the propriety, or rather the indispensible necessity of its being immediately spread out upon the land, after its removal from the shore; and that it ought never to be left in heaps on the shore, nor even on the land it is meant to fertilize. In the former case its

whole virtues as manure will be lost by a thorough drenching of rain; in the latter, the same circumstance will fertilize the soil immediately below the heaps only, while all the rest of the field is totally unmanured.

Being entirely uncertain and irregular in the times when it can be procured, as depending upon particular winds, and the state of the tides and currents, those farmers who are fully aware of its excellence as manure, anxiously seize every opportunity of procuring it, and, postponing every other pursuit for the time, that can possibly be put off, apply their whole strength to drive sea weed, whenever it can be had. It often happens that one tide leaves enormous quantities on the beach, which are swept away by the tide immediately succeeding.

In its application, sea weed is laid upon any part of the farm in want of manure, in whatever state of crop or tillage it may happen to be at the time, provided that the carts may go upon the ground without manifest injury to the growing crops; on land in any step of the fallow process, or preparation for turnips, pulse, or grain; upon the stubble of recently cut clover, to force a large second, or even a third cutting; upon land already sown with grain, for it will effectually fertilize, although not ploughed down, because the rain will wash its glutinous juices into the soil, and its dried up and blanched stems may be afterwards removed as useless encumberances.

It is sometimes made into composts with long litter, or any other vegetable rubbish that can be procured, the putrefaction of which it very much facilitates; but by far the most generally approved practice, is to lay it on by itself, in its recent state, as already described.

The

The effects of sea weed, as a manure, are supposed not to continue long in the soil; but as securing rich crops, wherever used with propriety, it enables the soil to contribute liberally to the production of muck, or farm yard manure. So beneficial are its effects where it can be had in abundance, that the full command of sea weed to a farm of good soil, is alleged, in East Lothian, to be worth 25 to 30s. an acre of additional rent, in comparison with equal soil that has not this accommodation.

The quantity of this manure given to the acre varies, according to circumstances, from 25 to 40 cart loads, and the quantity contained in each of these loads must necessarily vary, according as the road from the beach is easy or difficult. But it is universally inculcated by all farmers experienced in its use, that it is far better to manure a moderate extent thoroughly, than a larger slightly.

As this manure is extremely limited in this county, except in the parish of Cockburnspath, which lays on with East Lothian, to the north of the Lammermoor hills, this report cannot properly admit a more extended account of its application and effects. These will be found treated in detail in the report of East Lothian, where sea weed is most extensively used.

6. Composts are not so much attended to in this county as they ought to be, but almost every farmer collects more or less, according to his opportunities, which are mostly added to the muck or manure of the farm yard. The rakings of roads, scourings of old ditches, roots of couch grass, lime rubbish, coal ashes, and every species of refuse that can be procured, are heaped

heaped together, sometimes mixed with farm yard muck, or with lime, to assist the putrefactive process.

The compound of peat moss and dung, so strongly recommended by Lord Meadowbank, can only be employed where peat moss is to be procured, for making it, at a moderate distance. Some experiments have been lately instituted with this compost, but they are too recent to admit of giving any decisive report of their results, though the accounts received of them are favourable.

7. Of the other manures which are enumerated in this section of the plan for reprinted reports, nothing satisfactory can be advanced here, as hardly any of them have ever been used, at least to any extent, in Berwickshire.

Eight or ten years ago a cargo of spoilt herrings was sold for manure at Eyemouth, of which the reporter procured 200 barrels. These were spread upon land intended for turnip fallow, at the rate of 25 barrels to an acre, and ploughed under before winter. In the ensuing spring, when the land came to be again ploughed, hardly the smallest vestige, even of the heads and bones, were to be seen. Without any other manure the turnips turned out a full crop, and the subsequent grain and grass crops were perfectly satisfactory. The herrings were bought for less than a shilling a barrel, so that the land was manured at a very cheap rate. This however was a mere incident, as no such opportunity may ever occur again.

SECTION VI.—IRRIGATION.

This practice has not hitherto been introduced into the husbandry of Berwickshire, although there certainly are many places in the county, more especially at the southern slopes of the lower hills, where it might very readily be tried. Its principles are not hitherto understood here; and our agriculturalists have still sufficient employment for their capital and attentions, in the improvements of their lands and live stock. It will probably require the exertions of some spirited and intelligent landed proprietor to give the example, which, if attended by success, will unquestionably be eagerly followed. The first cost is necessarily large, and the efficacy, here at least, is somewhat problematical. Some slight attempts that have been already made, perhaps owing to an improper plan, and imperfect execution, gave very unfavourable impressions, for the pasture was obviously deteriorated, instead of improved. Most of the improved grass lands are much filled with white clover and ray grass, which are supposed to be greatly injured by irrigation; and an idea prevails that the pasture of irrigated lands is highly injurious to sheep. But the subject, as not followed in the county, does not admit of being farther pursued in this report.

CHAPTER

CHAPTER XIII.

EMBANKMENTS.

As there are no embankments whatever in this county, nothing can be here said on the subject. Some very slight attempts to defend a few holms or haughs from the destructive effects of floods, are so inartificial as not to merit being considered as instances, or to require any particular notice.

CHAPTER XIV.

LIVE STOCK.

THE reporter regrets that he cannot treat this very important chapter, according to the most ingenious arrangement of the plan for reprinted reports, as a great number of the particulars there enumerated have either no place in the management of this county, or are too loosely followed to admit of being accurately reported. These, however, shall be attended to in the several sections, as much as is consistent with the information procured by diligent enquiry.

SECTION I.—CATTLE.

1. THESE cannot be divided into such as are bred for beef, milk, and work. Work oxen are not to be found in

in the county. Milk is only attended to incidentally, so far as connected with family conveniency and breeding. Beef, that is sale to graziers or butchers, is the ultimate object of all the cattle of the county.

The cattle of Berwickshire are so much mixed by crossing as scarcely to admit of any particular description. Upon the whole, they are short horned, thin hided, and kindly feeders, and have been much improved by crosses with bulls of the Tees water breed, which is the kind chiefly admired in this district, and probably among the handsomest and best feeders in the island of Britain. In the richer vale land of the Merse, this improvement is carrying on rapidly; and several breeders possess cattle that would not disgrace the north Riding of Yorkshire; but in the drier turnip soiled parts of the county, cattle of a smaller size, that may be called half bred, are considered as more profitable, and easier kept in full food. The improvement of the cattle stock is considerably retarded by the numbers of cows, of all kinds, and sorts and sizes, which are kept by the farm servants, most of the calves from which are purchased and bred up by the farmers. But the principal breeders are at great pains in selecting well formed cows, and at considerable expence in procuring handsome bulls to improve the stock.

Generally speaking, the oxen are not carried on to any age. They are well fed from their youth up, and are generally fed off for market in their fourth year, very few reaching five years old. Cows, on the contrary, are generally old before they are fed off.

Great numbers of smaller cattle are bred upon the lower hills, and are disposed of to graziers in the low country

country for feeding, either on grass or turnips, or by a succession of both; and many Highland cattle of various descriptions, are bought in yearly for consuming straw, or for feeding on turnips during winter, and on grass in spring and summer.

Owing to all these circumstances, the stock of cattle in this county is infinitely various in kinds, sizes, and descriptions, insomuch, that it is hardly possible to give any description that could be said to apply to the particular stock or breed of the county. The carcasses, accordingly, in such a mixed breed, vary extremely, from even so low as 20 stones, when ready for the butcher, up to 50, 60, 80, or even 100 stones, 14 pounds avoirdupois each. From 40 to 60 stones may be said to include the extremes of the general native improved stock of the lower country. Sometimes a remarkably handsome and thriving ox is selected by a breeder, and carried on with extraordinary care, to six or seven years old, and to a great weight, partly as a kind of boast or sample of the excellence of his breed; but these instances are rare.

As work oxen are not used in the county, any old oxen that may be found occasionally in the hands of graziers, have been bought in from distant districts. Even these are lessening in their numbers yearly by the introduction of improved husbandry, and the increasing use of horses for labour, in the north-eastern parts of Scotland, whence almost exclusively old draught oxen used to be bought into this county. The cattle from the higher moors are mostly small and unhandsome, yet, when brought down to the low country pastures, they

they thrive remarkably well, and often amply repay the feeder.

2. The winter food of the cattle stock differs according to the immediate object. The cows in calf, and giving milk, are fed almost exclusively on white straw, or with a small addition of turnips to keep up their condition. Young cattle that are only carrying forwards in the three first years, are treated much in the same manner; but where turnips can be spared, it is now thought more profitable to give a liberal allowance from the very first winter, both as occasioning them to rise to greater size, and because the farm yard manure is vastly richer from well fed animals. Hay is hardly ever allowed to the cattle stock, except only to early calving cows, for some time before calving, and perhaps to feeding cattle, when turnips fail n spring before grass comes to a sufficient bite. Feeding cattle have a full allowance of turnips, as much as they will eat, and have always some straw in their racks to eat when they please. Chaff is thrown out to the fold yards from the barn for the growing cattle or winterers, but cut chaff is not in use. Cooking the food of cattle has not hitherto been adopted.

Oil cake is not in use, though it has sometimes been resorted to upon particular occasions, chiefly for carrying on some favourite to a great size. Except when turnips fail for fat cattle, before grass comes forward, and when the markets are particularly overstocked, corn is never given to cattle. But on such particular occasions some farmers have occasionally carried on their fat cattle for a week or two with oats, or with grinded beans.

Such

Such as are not fed off during the winter are carried on in summer on pasture grass; either in the old pastures already mentioned, as let yearly by auction; in old pastures that may be on the farms; in the artificial pastures, or on sown clover and ray grass. Soiling of cattle is not in use. It is considered as of the highest importance that cattle should always have abundance of water at their command in the fields where they pasture, as it disturbs and heats them when they have to be driven from their pastures to water. When upon a full, or even half allowance, of turnips, water is not considered so indispensibly necessary, yet is surely useful.

3. The general management has been already detailed, so that hardly any thing remains to be added in this subdivision. Stalls, properly so called, never were in use for fatting cattle. They were formerly fixed to stakes in long covered houses, but are now more generally fed in small separate shades, with small court yards to each, as more particularly mentioned in chap. 3. sect. 2. No attentive consideration has been had in this county to ascertain, by living weight, the meat gained by food given, nor is any particular attention given to know the quantities of food they consume. This is merely given to them in abundance, and their growth judged of by inspection and handling. The same may be said as to the comparison of live and dead weight. The absolute living weight seems never to enter into consideration, and indeed there are no means employed to ascertain this. No particulars respecting the disorders to which cattle are liable, that are worth detailing, have reached the knowledge of the reporter.

As no oxen are worked in the county the subdivision respecting them must be passed over. Within the memory of young men oxen joined with horses were universally used over the whole county for ploughing, and about forty years ago, or even less, they were used in coups or wains, a species of cart or carriage made purposely for them. Now oxen are universally abandoned in Berwickshire as beasts of draught or burthen, either in the field or on the road. In one solitary instance within the last three years, the reporter has seen a pair of old bulls in a plough, on a thin moorish soil, where they seemed to make good work, but went very slowly. During 15 years residence, in which time he has been repeatedly through all the best cultivated parts of Berwickshire, and the neighbouring counties of England and Scotland, he has never seen an ox employed on the road, and not exceeding three ploughs drawn by oxen at different places.

Somewhat more than 20 years ago a most respectable and opulent farmer in the neighbourhood of the reporter, used two oxen and two horses in each plough of an extensive farm for several years, and his horses were always most miserably worked down by the spring labour. He then tried his horses for a season, two only in each plough, without oxen. The same number of horses as before, with precisely the same feeding as usual, worked the ordinary extent of land, and preserved excellent condition. The inference which he drew in relating these circumstances is obvious: The different rates of motion, in the conjoined draught of horses and oxen, did not agree, and the horses had to draw both the plough and the oxen. This, however, is no argument against the use of either separately. But it is a certain and undeniable fact, that the same race of farmers, actively

tively and intelligently alive to their own interests, who formerly used oxen, or had been bred to their use under their fathers, have universally given them up; and, in spite of the high and increasing price of horses, and the absolute worthlessness of an old or lame horse, compared with an ox in the same predicament, they now employ horses only in every branch of husbandry operations. This is the case in the whole north of England and south of Scotland, and the fact is conclusive against volumes of the most ingenious speculative reasonings, so far as the situation and circumstances of these districts are concerned.

It was formerly customary to purchase in six and seven years old oxen from the north-eastern counties of Angus, Moray, and Aberdeen, that had been accustomed to work, and these were worked in this county for one season, and were afterwards fed off, or sold for feeding. Even this supply of aged cattle has now failed, as the demand by English graziers has been long so brisk as to carry off the northern cattle at much earlier ages, and even there, in the spirited progress of improvement, horses have been substituted for oxen in all husbandry work.

Indeed such has long been the demand for cattle, either for the graziers in the south, or for feeding within the county, and so early are they now sold or fed off, that a four years old ox is exceedingly rare, and any such are sure to be fattening off, and preparing for the butcher. A pair of five years old oxen, fit for labour, is probably not now to be found in the county, hardly even between the Humber and the Forth.

SECTION II.—SHEEP.

1. The sheep bred in Berwickshire are of several kinds. In the most exposed of the Lammermoor and Lauderdale hills the flocks are mostly of the black faced, or Tweedale kind, and are there exclusively kept for breeding. This is a long legged, active, hardy, and wild race of sheep, capable of travelling far in quest of their food, and of sustaining the hardships necessarily incident to their elevated bleak situation, and the severities of its winters and springs. They are horned, and carry scanty fleeces of coarse lank wool, but which answers for several coarser manufactures. These sheep are salved or smeared every year, with a mixture of 12 Scots pints of tar, not quite six English gallons, melted along with about 30 pounds of foul butter, and this quantity is sufficient to smear from four to five scores of sheep. The wool is shed aside in longitudinal rows, from head to tail, the salve spread thin by the fore finger of the operator on the bare skin, and these sheds are repeated at small distances, till the whole body of the animal gets an uniform thin coating, or smearing of the salve. By this the sheep are in some measure defended from the severities of the weather, and the sheep ticks, or *keds*, and other insects, which infest them, though not destroyed, are considerably kept under.

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In old times, after a sheep was salved, a considerable patch of unmingled tar was laid externally on the rump, just above the root of the tail, and called the *tar mark*. This was strongly objected to by the wool buyers, and is now universally abandoned.

The brood ewes of this black faced sheep are kept on their native hills, till they have produced two, or three crops of lambs. The *crock* ewes, as the old ones are called, are then sorted from the breeding flock for sale, and their places in the flock are supplied by young ewes or *gimmers*, of two years old complete. The *crocks* or *crones* are sold to farmers in the lowlands, either in lamb, by rams of their own breed, or for being served by heavier rams, sometimes coarse Leicester, to produce a crop of lambs on rich pastures, which are sold to butchers, and the mothers are afterwards fattened off either on the grass of that season, or carried forwards on turnips.

The wedders used to be kept upon the hills till three years old, and were then sold to graziers, but are now sold, either in the first year, while *hogs*, or in the second year when *dinmonds*. By this change the breeders either keep a larger flock of breeding ewes, and consequently sell a considerably larger number of old and young sheep yearly, or they give their flock a more abundant pasture by stocking lightly, and in consequence raise their sheep to better weights; and have even improved the breed, by careful selection, and in some instances, by a cross with a better breed.

It is difficult to give any idea of prices, as these depend so much upon the qualities of particular flocks, and the demand at the time of sale. The crock ewes, which used to sell for 10 or 12s. 12 or 14 years ago,

with one sheep gratis to the score, rose rapidly of late years to 20 and 25s. each for the exact number delivered; but fell last season nearly 25 per cent. Hogs and dinmonds rose proportionally, from 7 and 12 shillings respectively to 15 and 25 shillings; but have suffered a proportional fall in last season, 1807, with all other farm stock, of from 15 to 25 per cent.

In old times it was universally the custom to remove lambs from their mothers, to high bleak and barren summer grazings, by which their growth was much stinted. On the contrary, every judicious breeder now knows experimentally that it is very injurious to stint the food of young animals, and the greatest care is now taken to give them full feeding from their birth.

At the former period, the usual payment for summering a flock of lambs of this breed did not exceed 4 pence each; probably for 4 months, or 17 weeks. It is hardly possible to say what may now be the value of summering lambs, as the practice has long been discontinued, of sending them thus from home; but on the present principles, of full food from their birth up, it cannot well be worth less than 2 pence weekly, or above 8 times the value of the old mode. For well bred Leicester lambs, after weaning, the reporter has paid 6 pence a week for summering upon good pasture.

The wool of this kind of sheep is both coarse and scanty, requiring 8 to 10 fleeces to produce the wool stone of 24 pounds, which sells for about 15 shillings; to that each sheep may produce from 18 pence to 2 shillings yearly in wool. This price is to be understood as relative to the wool sales of 1807; but the price in the year 1808, has fallen considerably below that amount,

mount, and 10 shillings may be taken as the fair average of this kind of wool, or from 9 pence to 1 shilling for each fleece.

In the Merse, and a considerable way up the lower slopes of the southern hills of Lammermoor, the new Leicester breed, in a great variety of degrees of perfection, now universally prevails; and it is believed that no other known breed, in the peculiar circumstances of this county, could be nearly so profitable to the farmer. They require, however, always to have abundance of food, and easily procured; for, being short legged, heavy bodied, and carrying a great weight of wool, they are unable to undergo much fatigue or hardship, and do not thrive unless plentifully supplied at all seasons. This supply, the agricultural system of the district amply affords, and is indeed admirably calculated for providing.

The ewes of this breed are very generally put to the ram in their second year, after having been once shorn or clipt, when they are called gimmers or shearling ewes, and very often have two lambs. They are carried on as breeders as long as their teeth keep good; and are then separated from the flock, along with any small ill shaped sheep, or such as have not given satisfaction, and are either put to feed for the butcher, or are sold to graziers, or to other farmers who keep no regular flock, and purchase yearly to serve their own temporary purposes, for one crop of lambs, or to feed off, or both in succession.

The wedder hogs are always put to full feed immediately when removed from their mothers, and are carried on till completely fat without any check. They are sold off in the ensuing summer to butchers, imme-

diately after being shorn; and reach from forty to fifty shillings each, besides the value of their fleeces, which are sometimes worth eight shillings a piece. They are occasionally carried on through the succeeding winter as dinmonds, and are then sold at proportionally high prices; some having nearly reached four pounds each, besides a second fleece.

The wool of this breed is moderately fine, and of the middle staple between the long combing kind and the short, fine, cloathing wool. Three to four fleeces of the wedder hogs or shearlings, four to six of the breeding ewes, and two and a half to four rams fleeces, make a stone of twenty-four pounds; which has varied, within these few years, between twenty-five and thirty shillings, according to the demand from Yorkshire, and the fineness of staple in the particular flock; but scarcely exceeded a guinea in 1808.

Several landed proprietors and farmers in this county have, for many years, given the most systematic attention to improve this valuable breed of sheep, by purchasing or hiring rams, at very great expence, directly from some of the best flocks in Leicestershire, or from breeders in Northumberland or in this county, who breed from Leicester rams, and some of the purest of the Dishley or Bakewell blood is to be found on both sides of the Tweed. It might, perhaps, be thought invidious to particularise those gentlemen who have given the most detailed and judicious attention to this capital improvement, lest prejudice or partiality might be attributed to the reporter; neither does it seem at all necessary. The point of improvement to which the best flocks are brought is extremely obvious, even to very inexperienced observation, by the handsome compact

pact mould of their bodies, the excellence and abundance of their wool, their quiet domesticated disposition, their aptitude to become fat at an early age, and the small quantity of their offal when killed.

Several of the principal breeders hold annual ram shews, at which they let out rams for the season at great prices; rising from five guineas to a hundred for each ram. These shews are numerously attended, and diffuse a knowledge of the forms and properties of the breed, and of the best means of improvement; and they excite a laudable spirit of emulation to imitate and to excell. Before shewing, the rams are fed as fat as it is possible to make them; having for that purpose been kept upon the most abundant and most nourishing food of all kinds, from the close of the former covering season. In this case, they are fat when shewn almost beyond belief; as, according to an old saw, fat conceals a number of faults. After the shew, they are immediately stinted in their diet, to reduce them to some power of activity; as, otherwise, the exertions of their employment would assuredly kill them in a short time.

Such rams are never permitted to travel on foot; but are carried in carts from place to place. By the before-mentioned system of enormous feeding, and subsequent rapid reduction, their constitutions are often weakened. They sometimes fail altogether in performing their duty, or come far short of expectation, to the great disappointment of those who depend upon them for improving their flocks, and to the serious loss of their proprietors. They often die of the *yellows*, a disease probably analogous to the jaundice.

" Those who lay themselves out for the tup trade, or letting out rams at high prices, feed so high that their

their practice cannot be imitated by the county in general; yet the country has been greatly indebted to them for their great exertions to improve the breed, and it does not lessen their usefulness, that their measures have been taken with a view to their own emolument, by raising the price of good rams very high. The higher these prices are, it is to be presumed that the greater care will be taken by the breeders to select the best kinds, for letting out to their neighbours, who are always left to judge whether they can afford to give the price required."—A. L.

When well fed, the old ewes of this breed weigh from sixteen to twenty-six pounds a quarter, and their wedders or dinmonds up to thirty pounds. A sheep of this breed was lately killed at Berwick, which weighed 53 pounds a quarter, and had 25 pounds of tallow. Some breeders prefer a handsome small sized sheep; while others endeavour to preserve shape, and to produce a large size. Which of these is preferable seems undecided; and can only be determined satisfactorily by numerous comparative experiments of the quantities of mutton and wool produced from each, in the same time, and upon equal quantities of food.

"In all flocks of black cattle and sheep put out to graze, it is always found that a few get much fatter in a shorter time than the rest. It ought therefore to be a chief attention with breeders to trace back the genealogy of these good feeders, and to select his stock entirely from the breed of that kind. If this were done, and persisted in, with care and attention, the breed of the selector would, in time, be effectually improved, and he would have no occasion to resort to high and expensive feeding, in order to recommend his stock."—A. L.

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In the lowlands, where, from inclosure and improvement, this breed always has comfortable shelter and abundant provision; salving is utterly unknown. Instead of which, baths, or medicated liquors, are employed at various seasons, to kill ticks and other vermin. These baths are preserved, by the herds, as secret nostrums; but are generally composed of tobacco liquor, mixed with spirits of tar, or brown spirits, a coarse empyreumatic oil of turpentine, and some of them contain sublimate of mercury.

Although he has no particular experimental knowledge on this subject, the reporter is confident in asserting that the scab in sheep, and the mange in dogs and other animals, is the same disease, or one extremely analogous, with the itch in man, and that sulphur, or brimstone, will be found an infallible remedy.

Sometime before they are shorn, the sheep are carefully washed in a pool of water; always if possible in a running stream, that the sordes, or filth, may be carried away. Several men stand in the water, within reach of each other. The sheep are handed successively to each; are repeatedly plunged below water in all directions, and the wool carefully and repeatedly pressed and wrung, to take out all dirt. When completely dry, some days after washing, the fleeces are shorn transversely, beginning immediately behind the ears, and the wool is clipt close off with great neatness and dexterity.

The crock, or old ewes of this breed, are often fed off at home; or are sold for one crop of lambs, and sell for from 30 to 50 shillings, according to size, quality, or demand. They do not answer for fat lambs quite so well as inferior breeds, not being supposed such good

good nurses, as more apt to run to fat than to milk. Their product is generally sold as keeping hogs, or is carried on for wedders, dinmonds, and gimmers. These often go off, when taken from their mothers, at 20 to 25 shillings each. But in 1807 this kind of stock fell at least 5 shillings a head in price. The ewes are afterwards fattened for the butcher on grass, or are carried forward on turnips, and frequently produce very little more than their original cost; the profit depending chiefly on their lambs and wool.

On some of the best interior hills, and upon the higher exterior lands, verging on Lammermoor and Lauderdale, called the moor edges, the Cheviot breed, or *long sheep*, are kept. But for the description and particular properties of these, the reporter must refer to the agricultural view of Roxburghshire, their native district, where they have been carried to very high perfection by careful and judicious selection.

An intermediate breed between the Cheviot and Leicester, usually called half bred sheep, is very prevalent upon the best of the last mentioned situations. These very much resemble the Leicester breed, in form and qualities, except being inferior in size, not so handsome, and not getting fat at so very early an age; but the ewes are considered as better nurses, and the crocks or crones are often bought in as flying stock, to produce a crop of fat lambs, and then to be themselves fed off. These half bred lambs, got by a large Leicester ram, are generally as heavy in summer as the well bred Leicesters; but they do not make the same after progress, and are not therefore so fit to carry on for hogs or dinmonds.

In exposed situations, the half bred sheep are mostly

ly salved, but with a much larger proportion of butter to the tar than is given to the black faced breed in the higher moors. Five Scots pints of tar, not quite 2 English gallons and a half, with about 60 English pounds of butter, is reckoned sufficient to salve 4 or 5 scores of the half bred sheep. Salving, on the whole, loses ground; as sheep that have always abundance of food are less liable to injury from the vicissitudes of the weather; and modern husbandry finds it experimentally profitable that live stock, of all kinds, should never be stinted in their food.

Where large flocks are kept, either of the half-bred, the Cheviot, or the black-faced breeds, but more especially of the two latter, the careful method of individual washing, already described as followed in the low country, is very seldom given. A pool is formed in one of the mountain streams, having a high steep bank on one side, and an easy slope on the other. The flock is forced to plunge into the water from the high bank, and allowed to swim out on the other side; and this is repeated until the fleeces are considered as sufficiently clean.

A few years ago, a small breeding flock of South-down sheep was introduced into the demesne farm of a country gentleman of this county, as an experiment. It has not, as yet, been sufficiently tried to give any decisive opinion on its merits, in comparison with the Leicester breed, and the example has not been imitated; but, on the whole, it has turned out very satisfactory.

The foregoing general account of the sheep breeds, and system pursued in Berwickshire, was written before receiving the plan for the reprinted reports; and the following

following is meant to fill up the particular heads of inquiry of that new arrangement, so far as the system pursued in this county, and the information received by the reporter, admits of.

2. The food allowed to sheep in winter is very various, according to the situation and powers of the farm, and to the intention of the particular flock, or part of the flock. Leaving the mountainous district out of the question, as very much the same with other districts already reported, particularly the shires of Peebles and Selkirk, which need not therefore be repeated, it is meant to confine the present observations especially to the low country, and the Leicester breed, with which, almost exclusively, it is stocked.

The feeding part of the sheep stock, which are never checked, are laid upon turnips whenever the grass begins to fall off in the smallest degree; and it is very usual to have a hay rack in the turnip field, from which the sheep eat very little except during hard frosts, when they are hardly able to bite the turnips. The way in which the turnip or feeding flock is managed has been already sufficiently explained in ch. vii. sect. xiii. When the turnip crop fails, recourse is had to ruta-baga, ch. vii. sect. xvi. The rams of the farm are included in the feeding flock, and likewise all young male sheep, as wedder hogs and dinmonds, and likewise the crones or cast ewes.

The breeding ewes and ewe-hogs, which are not intended, of course, to be made fat, are kept on the best pastures, and the stubbles of the farm, as long as they can find sufficient provender; after which they are provided with hay in racks in their feeding grounds, especially in frosty weather, and when the snow lays on the

the ground; and, if hay be scarce, they must be thriftily served with turnips. At all events, a moderate allowance of turnips is given them, unless the weather be very favourable, with some early spring grass, for a few weeks before they are expected to lamb; and if, upon lambing, the weather remains unfavourable, turnips or ruta-baga are still supplied, to enable them to support themselves, and to rear their progeny. It is customary, if it can be spared, to shut up a few fields in autumn, that they may acquire some roughness, as kept grass, to help the ewe flock over the winter and early spring; but so much dependance is placed upon turnips and ruta-baga, that this practice is not attended to with the same precision as in some other districts. No roots or green crops but those already mentioned, turnips and ruta-baga, are cultivated for sheep in Berwickshire. Chaff, or cut chaff, or corn, or oil-cake, are never employed; except that the last used to be privately, for shew rams, before the remarkable feeding properties of ruta-baga were generally known.

In early spring, besides what has been already mentioned, there are no foods cultivated for or given to sheep; dependance being had on hay, turnips, and ruta-baga, to meet the young lays, or mixed ray grass and clovers. Watered meads are unknown, as has been already said respecting irrigation. Kept grass is not perhaps carried quite so far as it ought to be; as the farmers of this county, in some degree, rather overstock their land to admit of that resource. Burnet, in a former part of the report, has been already said not to be cultivated in the country; and the same thing has likewise been said respecting rye. Ray-grass is never cultivated by itself; but every farm uniformly has

has a regular portion of its rotation composed of a mixed crop of ray grass and clover, and that is destined for the sheep stock according to circumstances, upon the ultimate failure of turnips and ruta-baga; and in this description, of course, new lays are included. Vetches, or tares, are never cultivated in this county for the present purpose.

In summer, the feeding flock is merely supplied with the best grass on the farm, without any particular attention to whether the lays be new or old; any farther than that, having got the run of the early flush of the new lays, these are shut up in proper time to secure the crop of hay. The worst or least feeding grass of the farm, of course, is appropriated to the breeding flock: especial care being always had to keep them from any unsound grounds, that are liable to produce the disease of rot. No particular sheep walks are customary in this county, where all land is in absolute severalty; except that some farms have bare barren pastures, which never give a full bite to cattle or horses, but may afford decent subsistence to a very light sheep stock, especially as aided by better land on the farm. Salt is never given to sheep or cattle.

3. As folding is not practised in this county, the particulars, in the arrangement of the plan for the reprinted reports, relative to this head of inquiry, do not fall to be noticed in this report.

4. The management of the several kinds of sheep stock kept in this county, has been already detailed at the beginning of this section; so that nothing remains to add upon this head of inquiry that is at all material.

5. No particulars can be communicated respecting the relation between live and dead weight, as it is not customary here to pay any marked attention to these circumstances. Every buyer and seller judges to the best of his abilities and experience, of the weights of the sheep, and the tallow which they may contain, by handling and inspection merely, without having recourse to the living weights to assist the judgment. And no experiments have reached the reporter respecting the quantities of meat gained by fixed quantities of food. The food of fattening sheep, is pasture, both old and young lays, during the summer months, and turnips and ruta-baga, during the end of autumn, winter, and spring; and in no instance that the reporter has heard of, has any attempts been made to ascertain the quantities of food given.

6. The circumstances relative to the weight, quality, and price of wool, in the several kinds of sheep stock kept in this county have been already detailed in the commencement of this section, where these breeds are particularised. The quality and quantity of wool certainly depend very much upon the particular breeds, as already described; and the quantity depends greatly upon the abundance of food. No particular management is given in this respect, except that the utmost care is employed, in selecting the breeding ewes of the flock, and in excluding all such ewes as have any material defects in form or wool. Respecting the latter circumstance, in the better breeds, as the Leicester, Cheviot, and half-bred, every tendency towards black wool, or dead hair, is most anxiously guarded against. The rams are carefully selected with a view to the same circumstances as above enumerated.

It is not unusual with the shepherds to select, on the contrary, a few black-woolled ewes, for their own little privileged flock; as a small quantity of that kind of wool can always be sold at a higher price than that of white wool, and is in much request for the manufacture of worsted stockings for country use, as needing no dye, and being exceedingly lasting.

7. There is nothing peculiar to this county, as to the diseases of sheep, or the methods of cure, that would justify any detail of these matters in this report; more especially as these topics have been enlarged on in other reports; so that any thing that could be advanced here on the subject would only be repetition.

8. The numbers kept upon different spaces of land is extremely difficult to ascertain, for various reasons, and must vary indefinitely according to the quality of the soil and pasture, and the size and age of the sheep. An acre of rich old pasture, is considered as equal to the full keep of five full aged Leicester sheep, for the six summer months; and an acre of very good turnips ought to keep ten such sheep for the remainder of the year in full meat. Hence, valuing the acre of pasture at five pounds, and the acre of turnips at the same price, the complete years keep of a well bred sheep may cost thirty shillings. One material cause of the difficulty, in ascertaining the extent of land that will fully maintain a specific number of sheep, arises from the mixture of stock that is generally kept upon pastures; and because pastures are stocked in succession, according to circumstances, with various descriptions of stock; and the stock is in frequent fluctuation, some selling off as they grow fat, and others bought in to fill up vacancies.

"It has been found by experience, that the live stock of a farm always improves in proportion to the improvement of the pasture lands, and falls off necessarily as these deteriorate, by neglect or mismanagement. It is often also remarked, that the live stock of a farm improves as the tenant grows wealthy, and falls off as the tenant becomes poor; so that, in some degree, the stock of a farm is considered as a kind of barometer of the circumstances of the tenant."—A. L.

Before closing this section it may be proper to take notice of a singularly prolific ewe, the property of James Wilkie, Esq; of Foulden, in this county, which produced eleven lambs in the course of three immediately succeeding seasons. In spring 1803, she had four lambs; in 1804 three; and again four in 1806. She was of the ordinary breed of the lower part of the county. Her singular prolificness may be accounted for from the peculiar richness of her pasture, as universal experience assures us that ill fed ewes hardly ever have twins, while those that are in good condition, when put to the ram, very often have twins, and sometimes triplets. So far as can be learned, the breed of this ewe was not preserved, nor is it perhaps much to be regretted. The faculty of producing twins, on good pastures, is certainly desirable; but even triplets, much more four lambs at a birth, are greatly beyond the power of the mother ewe to rear to any decent perfection.

SECTION III.—HORSES.

1. The native breed of horses in Berwickshire cannot be ascertained, as most of the best work horses are bought in from other districts, chiefly from the counties of Ayr and Lanark in the west of Scotland. A good many are bred in the county, but very much mixed in blood, in various proportions, with those bought in from other parts; the stallions especially being almost universally from England, or from the west of Scotland. From these circumstances, it is obvious that they must be of very various descriptions, as to form, colour, and size. But in general they are strong, active, and hardy; as the farm work, both at home and in the carriage of lime, requires dispatch, and much continuance of labour. In driving lime, according to distance, they are often on the road, and waiting for turn at the kilns, from twelve to twenty hours on the stretch. In home work, of ploughing, harrowing, muck-leading, and the like, they are employed, during most of the year, two journies or yokings of five hours each. In the dead of winter, they are generally confined for three months to one journey of six hours in home work. In harvest, they are at work from as early in the morning as the grain will allow, till as late at night as the people can see to build the ricks; sometimes, with the assistance

assistance of the moon, working deep into the night; and are then never out of harness, but have always abundance of food within reach, at the rick sides, while their loads are discharging, their only allowed intervals of rest. Their food at this time, is either cut clover, tares, hay, or oats in the ear.

Horses vary in size and quality, according to the nature of the work they are intended for, or the judgment of their employer; being larger and more powerful upon strong clay lands; and smaller, tight, active horses are kept upon light turnip farms. They accordingly vary in price; but a tolerable young horse, fit for farm and road work, is hardly now to be purchased below thirty-five to forty pounds; and more powerful horses run from forty-five to fifty-five pounds each. These prices, indeed, are only recent, owing to great demand; and will naturally be reduced again in a few years, as almost every farmer now endeavours to rear such valuable stock for his own use, and the county will probably in a short time have some overplus for sale.

2. The numbers kept to space of land, is difficultly ascertainable, as it depends much upon the nature of the farm, and the proportion that is kept in tillage. One pair of horses is considered as able to labour from forty to fifty acres of tillage land; and this is the usual proportion of strength employed in this county. Therefore, as the farms are almost universally a full half in grass, the horse stock is usually one pair to every hundred acres of land on the farm.

"According to an estimate by Mr Low, there are about 4500 draught horses kept in the county, and about L.8000 is yearly sent to the west of Scotland

for horses to keep up this stock; but part of these bought horses are again sold into Northumberland, perhaps about a quarter of that sum, leaving L.6000 as the average yearly expence of keeping up the stock of farm horses in Berwickshire."—A. L.

3. In the summer months, when two full yokings, or journies, of five hours each, are performed, a pair of horses ought to plough an acre and a quarter daily; and in the short winter days, working one journey of six hours, about three quarters of an acre. This must, however, vary considerably, according to the nature of the soil, and its state of tillage; as it will require considerably longer time to labour through an acre of stubborn clay, the first ploughing, than to go over an acre of turnip soil, or even free loam, already in a state of tilth, or reduced by previous work.

4. The food in winter is very commonly white straw till the end of January, and then hay to enable them to meet the severity of spring seed work; from the end of May until the beginning or middle of November, pasture grass, or cut clover and cut tares.

5. During the whole year, except perhaps for three months of summer, when the clover is at its best, they are allowed two or three feeds of oats daily; extending for the nine months allowance to from twelve to fifteen quarters of oats to each horse, or twenty-four to thirty for each pair; or in money, from L.14. to L.18. for each horse, in the article of oats only. At the prices of oats, in winter 1807-8, the expence extended to from L.20. to L.30. The summer pasture, or soiling of a horse, may be worth one shilling a day, or about L.9. for the season; and the winters hay cannot be calculated at a smaller average sum. Hence, upon the whole, each

each pair of farm horses actually costs the farmer from sixty to seventy pounds for mere maintenance. If to this be added, the insurance and wear and tear of the pair, at ten pounds yearly; two pounds yearly for shoeing and farriery; five pounds a year for harness, the yearly expence will exceed eighty pounds. And if to this, thirty-two pounds are added as the yearly expence of a hind, according to a subsequent estimation in next chapter, and five pounds yearly to support the wear and tear of carts, ploughs, and other utensils, the full expence of each draught upon a Berwickshire farm will come nearly to the sum of L.120. a-year; or about eight shillings for each working day throughout the year.

A good young horse ought to last upon the average for fifteen years; after which his value is extremely little, perhaps not exceeding four to six pounds, for what originally cost fifty: But this decline in value has been already included in the foregoing estimation, under the article of insurance and wear and tear.

The harness is now invariably procured from saddlers, and consists of a great variety of articles that it seems quite needless to enumerate, as being very nearly similar to those universally in use through all England.

6. Nothing valuable can be here inserted relative to the diseases of horses and their cure, which are by no means well understood in this county, in which the general run of blacksmiths, calling themselves farriers, are abundantly ignorant. They can shoe, bleed, and physic tolerably well; and some of them can rowell, blister, and perhaps fire; but any real veterinary skill has not hitherto travelled into this county.

SECTION IV. V.—ASSES AND MULES.

As asses and mules are hitherto entirely unknown in this county, as animals of farm labour, no particulars whatever can be here inserted respecting them.

SECTION VI.—HOGS.

FORMERLY pork was in no estimation in Scotland, and very few pigs were kept. The demand at Berwick for pork to salt for the London market, has introduced the breeding of swine into this county, and they are now to be found on every farm, and almost at every cottage. Bacon is still a rare food, except at the tables of gentlemen and principal farmers; but pickled pork is now a standing dish in all farm kitchens, and is more or less used by cottagers and hinds, or married servants.

There is nothing particular in the breeds of this county, though some very handsome pigs have been introduced from the midland counties of England, and

are

are rapidly spreading. The china breed was for a time in high request; it had the property of becoming enormously fat, but was very small in size. A middle sized round ribbed hog is now preferred, which feeds at a year or less to twelve or sixteen stones of fourteen pounds each.

No extraordinary attention is given them. They go about farm yards, and the breeders often pasture along with the farm stock. A few are put up for feeding on refuse potatoes, cut clover or tares, the suillage of the kitchen, turnips, or the like, and are fed off with barley dust, grain, or beans. But no particular detailed management is applied to this kind of stock; which is more particularly a portion of the household economy than belonging to the superintendance of the farm: Accordingly, it is not thought necessary to enter upon the particulars of inquiry belonging to this section, as arranged in the plan for the reprinted reports.

SECTION VII.—RABBITS.

Of these, only a few wild ones are to be met with on dry banks of rivulets, in dry soiled plantations, and about sod fences. No warrens exist in the county, and none are kept any where with a view to profit.

SECTION VIII.—POULTRY.

BARN door fowls and ducks are reared on all farms, and a few by farms servants and villagers; but the latter are now as much as possible discouraged by farmers from keeping poultry, as they are found to be very destructive to standing corn, from which no restrictions, but the gun, can induce hinds and cotters wives to keep them shut up. A few geese are reared; but as there are no commons in the lowlands, and those still remaining in the hills are mere moors, the large flocks to be seen in some parts of the south have no representatives in this county. Turkies are reared about gentlemens houses, and a very few only are to be found on farms. They are too tender when young, and require attentions which cannot be spared from more important concerns. Poultry forms no object of farm management in Berwickshire to deserve the report of any particulars concerning them.

SECTION IX.—PIGEONS.

THIS county is very little troubled by that intolerable pest of some grain districts, and even the few dovecots about some gentlemens houses are very poorly productive. Farmers sons mostly have guns; and an idea prevails that no person can prosecute for the killing of pigeons, unless the individual property of those destroyed can be proved.

SECTION X.—BEES.

THE rearing of bees is almost exclusively confined to cottagers, though a few hives are kept in gentlemens gardens, and on some farms. Experience does not warrant them to be considered as a profitable stock, in any proportion to the trouble they give. Farmers have no leisure themselves, nor any idle persons, to attend upon and watch them, when throwing off swarms; and clean modern husbandry leaving vastly fewer wild flowers

flowers, or in other words fewer weeds, the food or pasture of bees has become scarce, and is every year diminishing. There is, however, a good deal of honey collected by cottagers, and farm servants wives, chiefly about the moor edges, where bees find abundant food among the heather; and honey from these situations is considered as peculiarly rich and high flavoured, though it disagrees with some constitutions.

CHAPTER

CHAPTER XV.

RURAL ECONOMY.

SECTION I.—LABOUR.

1. The general system of farm labour has been already mentioned sufficiently in detail in various parts of the foregoing divisions of this report. The regular and constant servants of every farm consists of hinds, or married ploughmen, who are yearly servants from Whitsunday to Whitsunday; and single men who live in their masters houses, and are hired half yearly, as likewise are the household women servants.

Upon every farm, according to its size, a certain number of hinds, or married men servants, are kept, who may be called ploughmen, each of whom takes the charge of, and works, a pair of horses, in whatever way they may be required. Each hind has a cottage upon the farm, of one room, formerly noticed, which he furnishes at his own expence, and is allowed the keep of a cow, six months on pasture, and six months in the house

house upon straw, with a regulated allowance of coarse hay, or turnips, or something equivalent, about calving time. The whole produce from this cow, which they purchase themselves, is their own property, but they are not allowed to keep a calf upon the farm. They are allowed ground on which to plant one or two firlots of potatoes, from one and a half to three bushels, all the horse culture of which is given by the farm strength, and all the hand culture by their wives and children, at their own cost. Each has permission to sow a peck of lintseed, the whole hand culture of which, and its preparation into flax, devolves upon his family. For the most part each is allowed to keep three hens, which they generally exceed. They receive a certain stipulated quantity of grain, instead of wages, according to bargain, from 13 to 15 bolls of six bushels each, and a yearly allowance in money, according to agreement, from 30 to 40s. each, in name of *sheep silver*, being a commutation of an ancient permission of keeping a few sheep upon the farm.

They likewise have their food during harvest, as their wives are then employed in reaping, and they have the carriage of their coals gratis, which they must purchase themselves. Estimating the whole at the present average rates, the expence of a Berwickshire hind, or his yearly gains, may have been as under during the year from Whitsunday 1806 to Whitsunday 1807, or from Whitsunday 1807 to the same term in 1808.

	£.	s.	d.	£.	s.	d.
Allowance in money				2	0	0
Ten bolls of oats, or 60 bush. at 21s.	10	10	0			
Four bolls of barley, or 24 bush. 22s.	4	8	0			
Carry over	16	18	0			

	£.	s.	d.	£.	s.	d.
Brought over	16	18	0			
One boll peas or beans, or 6 bush.	1	8	0			
These may be called wages - - -				18	6	0
Keep of a cow the whole year, at 6d. a-day - - - -	9	2	6			
Value of potatoes, five bolls, at 8s. -	2	0	0			
Value of flax - - - - -	0	10	0			
Allowance of poultry - - -	0	10	0			
Harvest food, & allowance while leading	1	10	0			
Carriage of four carts of coals -	1	0	0			
These may be called gains - -				14	12	6
Total - - -				32	18	6

Had the grain been estimated at the actual prices of December 1807, this sum would have risen to L.40. and if extended to the prices in June 1808, the value would have been L.50.; but the foregoing estimate has been formed upon what seemed a fair average price of grain.

The value of the cottage and small cabbage garden is not estimated, as the hinds wife is generally bound to shear during harvest without wages, but with full harvest food, and must work at all out door labour, especially hoeing and hay harvest, for the customary wages of the country.

A new custom is gradually creeping in, of the hinds demanding money and meal instead of grain. In some instances L.18. in money, and a weekly allowance of two pecks, or 17 pounds and a half of oatmeal, have been bargained for, instead of the articles in the foregoing account, denominated wages; all the rest remaining as there stated. These new allowances, at the average

rage prices, will amount to L.25. 16s. and the whole, gains included, will be L.40. 8s. 6d. and if calculated at the prices of December 1807, will amount to L.52. 18s. 6d.

The reporter is fully aware that these estimates of a hinds gains considerably exceed former calculations on this subject, but he firmly believes what is here stated does not exceed the truth, and, all the particulars being distinctly exhibited, the result can be easily checked. Hence, upon the whole, the hinds or married men servants of farmers in Berwickshire, are upon a most respectable footing, and accordingly they are able to bring up numerous families in a most reputable manner.

In full proof of this, it may be proper to repeat that portion of the hinds gains, already estimated a little before this at what is believed to be a fair average, at the actual prices received for grain in Berwick market in November and December 1808, viz.

	£.	s.	d.
Money allowance as before - - -	2	0	0.
Ten bolls of oats at 26s. - - - -	13	0	0
Four bolls of barley at 34s. - -	6	16	0
One boll of peas or beans - - -	2	5	0
Total of wages part, instead of L.18. 6s. is	24	1	0

They have other advantages, in common indeed with all other country labourers and cottagers, as their wives and children, from the moment they can handle a hoe or weed-hook, are never in want of outwork, for which they receive ample wages, except during the dead of winter, when they attend the parochial schools. Their boys soon go to place, first as cowherds, and afterwards

as

as single servants in farmers families. The girls begin early at out-work, and afterwards go to service. In fact a hinds family, after the first few years of helpless infancy has been got over, is his riches; and often contributes to maintain him when past labour. Nothing is wanting, except that they should all belong to benefit clubs, for their support in old age, to render their situations most completely comfortable and independant.

To complete the account it is necessary to state what may be termed adventitious and family gains, as follow:

	£.	s.	d.
His wifes harvest food, 28 days, at 10d. - -	1	3	4
Ditto 120 days out-work at 10d. - -	5	0	0
Two children on the average, ditto each at 8d.	8	0	0
Gains of the wife and children in barn work, and spinning through the winter - -	4	7	6
Total - -	18	10	10
Add hinds own gains, as already stated -	32	18	6
General total for the family	51	9	4

Upon most farms, an upper servant, farm-steward, or bailif, is employed, to whom the special orders for farm work are communicated, and who sees it executed, and takes charge of corning the horses. To him, likewise, the charge of sowing, stacking, and thrashing, is confided. In smaller farms he usually works a pair of horses, as one of the hinds; but on larger farms, he mostly superintends only. He is paid like other hinds, in grain and money, with such additional wages or gains as may be agreed upon, seldom exceeding from 3 to L.5 above the other servants.

Every farm of any extent has a shepherd, who receives hinds wages and allowances, and has, in addition, the right of keeping an agreed number of ewes along with the flock of the farm. In the low country usually from three to six ewes, which he finds at his own cost, and has the whole of their produce in wool and lambs. He is likewise allowed one, two, or three young sheep, ewe hogs, and gimmers, to replace his old or cast ewes.

In Lammermoor, the herds flock is considerably more numerous; and as, upon large breeding farms, the principal shepherd is often obliged to keep one, two, or more under herds, a special bargain for their wages and maintenance is entered into according to circumstances, usually paid in oatmeal, and the allowance of two or more cows, with a proportional addition to his sheep flock.

Besides the hinds or married servants, most farmers keep one, two, or more single servants, or unmarried lads, who live in the house, and who each work a pair of horses. There are half yearly servants, with money wages, having their full board in the farmers kitchen.

Their wages vary, from five or six pounds, up to twelve for the half year.

2. The labouring work of the farm, as hay mowing, hedging, ditching, draining, and the like, is performed by hired labourers upon days wages, or upon contract by piece work. The price varies from 2s. 6d. a day in summer, to 1s. 1⅔d. or 18d. in winter. When hired for the whole year round, from half a guinea to 12s. a week. Upon the large farms there usually is one or two such labourers having cottages, for which their wives have to shear. Such labourers may earn from 25 to L.30 yearly, besides their harvest wages and food, and generally have

have extraordinary wages for mowing hay. Their families have the same opportunities of gain, as already mentioned respecting hinds, and their whole yearly earnings may be very nearly similar to those of the hinds.

By reference to the reporters books, from the year 1798 downwards, he finds that he has paid for labourers, partly employed in farm work, and partly in his manufacture, and hired for the whole year, as follows, which he believes is a fair average. They have always the usual harvest advantages in addition.

In the years 1798, 1799, and 1800,	7s.		weekly.
In ——— 1801, 1802, and 1803,	9s.		———
In ——— 1804, and 1805, -	9s.	6d.	———
In ——— 1806, and 1807, -	10s.	6d.	———
In ——— 1808, - -	12s.		———

The hours of labour during eight months are from six in the morning till six in the evening, with one hour for breakfast and one for dinner, at nine and one respectively. In the four winter months of November, December, January, and February, work continues during good light, when frost allows, and breakfast is taken before work begins.

Piece work varies according to agreement; and has been already noticed in several foregoing sections of this report, under the particular heads to which these works refer, especially draining, hedging, and ditching. Turnip hoeing has sometimes been contracted for, twice over, and the farmer to be satisfied with its cleanness, at from 4 to 7s. an acre; mowing hay, at from 3 to 5s. reaping and stooking, without food, at from 10 to 15s.

all by the acre, but such contract work is by no means general.

What is called out-work, as helping to fill muck carts, spreading the muck, setting and hoeing potatoes, hoeing turnips, carrying seed to the sowers, hoeing drilled grain, weeding, gathering surface stones, hay-making, and the like, are mostly performed by women and young people of either sex, but mostly girls. These have days wages, which vary from 9d. to 1s. as can be agreed upon; 15 years ago they were only from 4d. to 6d. This kind of work is performed under the superintendance of the farm steward, where one is kept that does not work horses, and often under a grieve hired for the season.

It has been already noticed, in chap. 3. sect. 2. and 5. that cottages are attached to almost every farm, for the hinds at least, and often for the day labourers that are almost constantly employed; so that it is altogether unnecessary to repeat any thing relative to these here. It was customary to have a few other cottages upon the larger farms, let to weavers chiefly, and their occupiers bound to shear at the ordinary wages, and to supply certain outworkers when wanted; but these are now fast falling into disuse, owing to the great expence of repairs, and such people now live in the country villages, whence the farmers hire what labourers of all kinds they may need.

The expence of labour, proportioned to space of land, is so infinitely variable, from the great variety of circumstances of different farms, that it is quite impossible to give any satisfactory appreciation. In a former part of this report, chap. 4. sect. 7. a general view has already been given of the expences incident to a farm mostly of

of turnip soil, to which the present head of discussion may be referred.

The particulars, and expences, and wages, of harvest work have already been discussed in chap. 7. sect. 4. and need not be repeated in this place.

SECTION II.—PRICE OF PROVISIONS.

The provisions of labouring people are various according to circumstances. Those given by farmers to their harvest workers have been already mentioned in chap. 7. sect. 4. Those living in their own houses generally use porridge for breakfast, which is oatmeal stirred into boiling water, seasoned with salt, and boiled to the consistency of a pudding. It is eaten along with milk mostly skimmed, or butter milk, or small beer, or a species of beer made with treacle and water. For dinner, potatoe broth, or potatoes boiled down to a kind of thick soup, with a small quantity of any kind of fat, and seasoned with pepper and salt, eaten along with barley bread, and sometimes with a little pickled pork, or a salt herring. For supper, boiled potatoes, or barley bread, with a little skimmed milk. Beef or mutton is used very sparingly by labouring people; but both these and wheaten bread are gaining ground yearly.

Out of door labourers, often having no conveniency for cooking where they work, and being distant from

home, carry their provisions to the field, which, for dinner, is often wheaten bread and a bottle of skimmed milk or small beer. Sometimes broth and bread is brought them by their wives or children.

In-door servants, in farmers kitchens, have porridge for breakfast, with milk; broth, and barley bread, with pork, mutton, or beef, for dinner; and bread and butter, or cheese, or potatoes and milk, for supper.

Tea, and bread and butter for breakfast, is making rapid strides in the housewifery of hinds and other cottagers, and even women servants in farmers kitchens now mostly get tea and bread with butter in the afternoon.

It was formerly a current opinion in the low country of Scotland, that a labouring mans days wages ought to equal the average price of a peck of oatmeal, or $8\frac{1}{4}$ pounds averdupois. This, at an average price of one guinea the boll of 16 pecks, would amount to 1s. 6d. a-day, or 9s. a-week. But it will be seen, by the wages quoted in the immediately preceding section, that they have of late years gone a good deal beyond that rule. Indeed, the number of men who have been abstracted from labour for the defence of the country, in the army, militia, and navy, have rendered labourers scarce, and consequently dear.

SECTION

SECTION III.—FUEL.

In the hills and other places, where peats or turf are to be had, these still constitute a considerable portion of the fuel both of the farmers and labourers. But the preparation of this substance for fuel occupies a vast deal of time and labour, in cutting, drying, and carrying home, and in wet summers can hardly be got, insomuch that those who depend upon peats ought always to have a stock sufficient for two years consumption. Coals, though distant, and consequently expensive, are every year getting more and more into use, and will soon, probably, supersede very much the employment of peats. There are so very few woods in the county, that they can hardly be mentioned as a regular source of fuel, though poor people pick up a few broken boughs in plantations, and procure some furze about moors and hedge banks, to keep their fires.

The price of coals varies, according to the distance of carriage, from 8 to 10s. for a small single horse cart load, probably not exceeding 1000 weight. They may be purchased, ship borne, at Eyemouth, at from 12 to 20s. the ton, besides the expence of driving. The reporter does not know the expence or relative value of peats, in comparison with coals, because peats are hard-

ly ever an object of sale. In the moors, a thin surface turf is much used as fuel, in conjunction with peat, which it greatly tends to economize, by in part smothering up the more inflammable peat. There are no circumstances in the management of fuel meriting notice that have come to the knowledge of the reporter.

CHAPTER

CHAPTER XVI.

POLITICAL ECONOMY.

SECTION I.—ROADS.

THE roads may be considered under three separate heads, the post roads, leading mostly north and south in their general direction; the turnpike roads, which cross the country in various directions; and the parochial roads.

1. There are two post roads leading through this county from Edinburgh towards London. The principal, and most frequented of these, leading from Edinburgh through East Lothian by Dunbar, passes through Ayton to Berwick. This is entirely supported by the produce of two toll-bars, at the north and south boundaries of the county. Having been originally carried over the summit of the eastern end of the Lammermoor hills, and directly across the top of a considerable isolated hill, between Ayton and Berwick, and being consequently incommoded in several places by long and steep

and steep pulls, a recent act of parliament has authorised the trustees to alter its direction, so as to carry it across this county by very gentle acclivities. That portion of this new plan, from Ayton-bridge to Berwick boundary, is now completed. By it, about five miles of road, instead of being most inconveniently steep, and over a cold barren moor, is every where almost level, or on a very gentle acclivity, and will lead through a finely cultivated upland vale, and round a bold promontory, grandly overhanging the German ocean. In many parts of the old post road, the steeps or pulls rise at the rate of one foot in fifteen; and in one place the ascent is one foot in thirteen. In the whole extent of the new line, above seventeen miles, the ordinary acclivity, in surmounting obstacles, will only be one foot in forty-two; except in one place where a rise of one foot in thirty-two will necessarily remain.

The funds of the trust have been sufficiently increased, in consequence of the additional rates imposed by the act of parliament, to secure interest for the debt already incurred, together with a sinking fund, for gradually extinguishing the debt, and an excrescence for keeping the road in repair.

But from unexpected difficulties having enhanced the expence of the portion already completed far beyond the estimate, and from the produce of the tolls, at the new rate, having failed to produce the expected revenue, it is now found impossible to complete the whole intended new line, without procuring more extensive power from parliament; particularly the power of erecting additional turnpike gates. The intended plan meant to have carried the new line of road from Ayton bridge up the beautiful vale of the river Eye, and to have reached

reached the vale of Lothian at Dunglas, or Calbrandspath, without a single pull of any importance.

In the first year after procuring the new act of parliament, 1806, though the toll duties were increased a third part, besides several exemptions abolished, from entire want of competition at the public letting by auction, the two toll bars were raised so triflingly in their rents, that doubts were entertained of the trustees being able to carry through this great improvement in its full extent. At the auction of 1807, in consequence of competition, an ample rise of rent was procured, which it was thought would fully warrant the immediate progress of the whole line. In 1805, the rent of both tolls, under the old rates, was L.500. In 1806, after the increased rates, the rent only rose to L.600. But in 1807, both tolls were let for L.824.

In 1808, however, the set of the tolls fell again considerably short, being only L.706. 10s. owing to which, and the great increase of wages, and consequent rise on the price of forming, inclosing, and metalling, and of building bridges, it has been found expedient to apply again to parliament for additional powers, and additional revenue, before attempting to extend the new road from Ayton to East Lothian, as already mentioned.

The yearly expence of keeping up the old road, upon contracts still current, was L.103 yearly for about seventeen miles, or about L.6 yearly for each mile; but the contract having been entered into several years ago, and labour having since considerably increased in expence, the contractor has applied to the trustees for relief. In the present circumstances of the country, particularly in regard to wages, and hire of carts for leading

ing materials, one third more, or L.8 a-year per mile, may probably be fully sufficient for keeping such a road, when well made, in thorough repair. There remains a surplus, for interest and reduction of debt, and for future improvements, of about L.720 a-year; but which has been considerably diminished in 1808.

2. The materials employed in making and repairing roads in this county, are almost invariably stones of various descriptions broken small. The best are those land stones formerly described, which are gathered from the surface of tillage land, or the hard whin stones which are found on the surface of moors; in defect of these, such quarries as can be found in convenient situations, and which produce hard stone of the whin or basalt kind. Gravel is hardly ever to be procured, in sufficient abundance, for the public roads.

3. It is next to impossible to give any precise idea of the expence which will be incurred by this new line, so far as now carrying on, as the contract has never been explicitly entered into, many blanks having been left in the specification of agreement. In the management of such public concerns, there is one very general error of entrusting the specific arrangements to committees, the individuals of which can seldom make their times agree for conducting business which requires much minute investigation. All such matters, after settling some general principles in the committee, ought to be subcommitted to the care of one intelligent individual, and his arrangements made liable to the review of the committee, before final settlement.

The contract price, for forming and metalling the new line of road, between Berwick bounds and Ayton bridge, was thirty shillings for each rood of seven yards; and

and an additional contract was afterwards entered into, for blinding or gravelling the same piece of road, at three shillings the rood; in all about L.415 for each statute mile, besides fencing, bridges, and compensations.

The compensations awarded to proprietors and tenants, on this new line of road, for about four miles and a half, from Ayton bridge to Berwick bounds, as determined by arbitrators, amount to L.1874. 19s. 6d. for the value of ground occupied; the construction of fences on both sides; and the loss of growing crops; or about L.416 a mile. But some difficulties remain to settle, in consequence of alterations in the line, since these compensations were awarded; and the damages within the bounds of Berwick, about half a mile, have not yet been ascertained. Thus, the whole expence of this part of the new line of road, including bridges and tunnels, has amounted to about a thousand pounds for each mile. Considerable expence has likewise been incurred for heightening and widening Ayton bridge, and for some other small bridges and tunnels in the line of road. The other part, from Ayton to Dunglas, is expected to be done much cheaper, because going mostly through less valuable ground; having more abundant good materials at hand; and requiring fewer bridges and tunnels in proportion to its extent.

Unexpected difficulties have, however, occurred, in regard to the completion of the original plan in its full extent, part of which have been already noticed; and some differences of opinion prevail among the gentlemen who have the superintendance and direction, as trustees, that may delay, defeat, or alter, the original plan

plan of this road. It does not become the reporter to take any part in those differences, and he must therefore decline entering any farther into the consideration of this subject.

4. The other post road leads from Edinburgh by Lauder, where it divides into three branches, which pass the Tweed at the three bridges of Coldstream, Kelso, and Leader-foot. It is unnecessary to be particular respecting any of these roads; excepting merely to state that one of them, which passes by Jedburgh, was expected to have become the great line of communication between London and Edinburgh, because considerably nearer in number of miles than any other road. But it is still very little frequented, for several reasons: It passes for many miles through one of the most barren districts in the kingdom, especially on the English side of the borders; it has hardly any accommodations for travelling or travellers; and many parts of its course has been most injudiciously carried, perpetually up and down hill, from not considering that it is often as near to go round a hill, as over it, and always much easier.

5. The cross turnpike roads of the county are managed, like the post roads, by parliamentary commissioners, and are made and repaired from the produce of tollbars. These roads, in many places, still labour under the disadvantage of improper alignment, with steep ascents and descents, instead of the judiciously chosen levels so conspicuous in the conduct of the new post road particularised at the commencement of this section. They are likewise by no means so well kept as they ought, but are yearly improving, as the amelioration of their funds admit.

Under

Under the commission 108 miles of road within the county have been assumed as turnpike, and the commissioners still have power to take 121 miles more under their charge, and to erect toll-bars for the purpose of revenue to make and repair them. It were greatly to be wished that they would assume the whole without delay, as the statute labour funds, for the parochial roads, would thereby become greatly more efficient, by having considerably less extent to support. At present the free revenue of the turnpike road commission, independent of the interest of debt, is about L.700 a-year, or nearly L.7 yearly for each mile.

6. The parochial roads are under the superintendance of local or district commissioners, who levy the conversion money, appointed by law instead of statute labour, and apportion it for making and repairing the roads of each parish within their jurisdiction. Anciently, all farmers, with their servants, horses, and cottagers, were bound to labour a fixed number of days yearly upon the roads, entirely at their own cost. This was called statute labour, and was found both burthensome and inefficient. By law it has been converted into a tax in money, which is now expended upon the roads.

There are still about 540 miles of parochial roads that depend entirely upon the statute labour money. That fund, amounting to about L.1750 yearly, gives about L.3. 10s. for each mile, which is by no means sufficient. Were this fund relieved, as already proposed, by the assumption of 121 miles under the management of the turnpike commission, only about 419 miles would remain, for which there would be about four guineas yearly for each mile; and as the turnpike commissioners would necessarily select the most public roads,

roads, and those which are at present most expensive, the statute labour funds would become considerably more efficient in reality than in appearance, by the change, as having to keep up roads of much less general resort. In illustration of this it may be mentioned, that about three miles and a half of the road from Dunse to Eyemouth still remains parochial, though it is probably more frequented than most public roads in the county, as leading to the only sea port. It is therefore an obvious hardship upon the parishes of Eyemouth and Ayton to have this road to keep up from their peculiar funds, as it is of infinite importance to the whole county. The expence of supporting these three miles and a half would easily keep 15 miles of ordinary parish road in good repair.

7. The farm ways are infinitely various, but are for the most part mere tracts left at convenient places, to communicate from the farm yard to the several fields, and are hardly either formed into the shape of roads, or at all made or mended. Sometimes, in passing deep clay soils, or through wet hollows, a few cart loads of stones, gathered from the surface of the fields, are tumbled in to assist the passage, and a few tunnels are built over small rivulets, or deep ditches. But on the whole, when the general spirit of inclosure took place, as formerly mentioned, betwen 1750 and 1760, the fields of the newly laid out farms were arranged to correspond as conveniently as possible with the various parochial roads that were then lined out, for communication from place to place, and with the great roads.

8. There does not exist in the whole county any thing that can be considered as a concave road or hollow way, unless so far as some few roads of communi-

cation across moors, and in a few other places, which have never been formed, made, or repaired, and have worn hollow or concave by the friction of carts and horses, and the operation of heavy rains washing away the soil; but nothing of the kind has ever been attempted artificially.

9. All made roads whatever in this county are formed with a very moderate degree of convexity, barely sufficient to facilitate the drainage of surface water towards the sides. Generally speaking, the road is divided into three portions, the middle portion, from 10 to 16 feet broad, widest in the post road, is metalled, or coated with broken stones, from 9 to 12 inches deep in the middle, and tapering to about two inches thinner at the sides, which forms the whole of the convexity; and this made or metalled part is generally raised about half the thickness of the road materials above the two unmetalled side portions, which serve for bridle roads in good weather. The two sides, in the more anciently lined out roads, are often bounded by three feet ditches, but of late it has been preferred to make the fence ditches on the side of the hedge bank next the fields, leaving openings or drains here and there to admit the water from the road, and having only a gentle slope at the road sides to drain off the water. The general breadth of the new post road is 40 feet, of which 12 on each side are left as summer roads, and 16 in the middle is metalled for carriages. The common turnpike roads and parochial roads are usually from 28 to 30 feet wide. The stones, in making and repairing, are bargained to be broken the size of a goose egg, a very vague expression, and still more vaguely complied with. For the new post road it was stipulated that

every stone should be small enough to go through an iron ring of two inches and a half diameter.

10. Sufficient attention is not always given to see that the contractors use stones of good quality, or cause them to be broken sufficiently small. The common clay stone rock of the county, which is often employed, soon melts down into clay; it therefore ought to be absolutely prohibited in all contracts. Stones gathered from the tillage land, and those which abound in the moors, are our best road materials, and, where these cannot be got, care should be taken that real hard whin stone be substituted. River gravel, generally speaking, is too much rounded, and so smooth, that it hardly ever binds; but where land gravel, or splintery whin rock can be had within a moderate distance, these answer admirably, either alone, or laid over broken whin or land stones.

After forming a piece of road, and covering it to the proper thickness with broken stones, it is the custom to throw a thin coat of earth over all, or land gravel in preference, if that can be had. But from dishonest contractors often employing this finishing to cover deceit, either bad stones, or not sufficiently broken, or less than the agreed thickness, some trustees forbid this practice. In consequence many pieces of road, though sufficiently covered by good materials, have become very unpleasant, owing to the loose stones yielding to the wheels of loaded carts, and forming deep ruts. This might have been greatly prevented by the covering of earth or gravel, assisting the broken stones to bind or cement together. To prevent the deceit complained of, it were easy for the road surveyor to examine the newly made or repaired road, before the binding

binding of earth or gravel is thrown on, and then to give orders for that purpose.

For making new roads, or repairing old ones, it is universal to let them out to contractors at certain agreed rates, and under certain conditions, either by public auction to the lowest bidders, or by proposal. The principal roads are kept in repair by permanent contracts, sometimes for several years endurance, at a fixed yearly rate per mile, under the superintendance of a surveyor, and are stipulated to be left in good order at the end of the period.

In the parish roads, as the funds are extremely limited, and there is no authority to borrow money upon their security, portions are selected yearly for repairs, as far as the funds can allow, and are let out by public auction to the lowest bidder.

Roads were originally mere tracts, appropriated for passage, often much at random, before the general inclosure, and before funds were established for making and repairing them. They were neither made nor mended, except perhaps some of the worst sloughs, which were occasionally a little filled up, by means of statute labour. In this predicament, the higher grounds, as drier and harder, were certainly preferable to the more easy levels, in deep soft soil. In these old tracks, more especially where they passed through clay lands, wheel carriages were mostly inadmissible, except in the dry weather of summer and autumn: Consequently, farm grain was almost universally sent to market on horseback, within the memory of middle aged men, and even coals were brought home by the same conveyance. The Berwickshire roads, especially those of the *how* of the Merse, were bad and almost impracticable, even to a

proverb; full of deep sloughs, intermixed with large unbroken stones, as a kind of steps to prevent drowning. It has been unfortunate, though unavoidable, that the necessity of made roads became obvious before the true principles of their alignment were understood. From that cause, large sums have been expended upon very improper lines of road, and, in many instances, the whole must be resumed upon better principles of direction, but with vastly increased expence. This evil is, however, greatly alleviated by the more than proportionally increased, and increasing, opulence of the county, to enable it to sustain the necessary expenditure. And now that an extensive new line of road has been surveyed and pointed out for this county, by the highly ingenious road engineer Mr Abercrombie, the planner of our new post road, the trustees can have no excuse in the formation of any new lines of road, if they do not profit by the excellent example laid before them.

Although there is nothing very particular, or peculiarly excellent, in the modes of making and repairing roads in this county, except the most ingeniously devised direction of the new post road, yet as the subject is intimately connected with agricultural and other improvements, this article has been in some measure enlarged upon, but the minute details of uninteresting particulars have been carefully avoided.

11. In no instance whatever is water intentionally applied, in any respect, to the roads of Berwickshire.

SECTION

SECTION II.—CANALS AND RAIL-WAYS.

THERE are neither canals nor rail-ways within this county. Many years ago, a navigable canal was proposed from Berwick to Kelso, up the vale of Tweed. The rise, in the winding course of that river, of about thirty miles, is said to be ninety two feet perpendicular, which might have required ten or twelve locks. This subject was again agitated about sixteen years ago; but very great obstacles occurred on the survey. Perhaps a direction from Eyemouth, by the vale of the Eye, Billybog, Whitadder, Leet, &c. might be found more practicable. But the high probability is, that the trade upon any such canal would not be nearly adequate to the expence, at least for many years to come.

A rail-way might probably be constructed upon one or other of these lines, at vastly less expence, and might very effectually serve the purposes of the interior, by facilitating the carriage of lime, coals, and timber from the coast. Advantage would certainly be taken of such an establishment for sending down grain, and the facility of transport might help to introduce manufactures of various kinds, both in this county and Roxburghshire, both of which possess numerous streams well adapted for machinery, and ample materials for the woollen manufacture.

SECTION III.—FAIRS.

THE only fairs of any importance in the county are held at Dunse, in the beginning of summer and end of autumn, for the sale of farm stock and horses; but besides these, a variety of fairs, in Northumberland, and Roxburgh, and at Berwick, give all manner of facility to the farmers for purchasing or disposing of stock. One or two fairs in East Lothian, the annual November fair of Edinburgh, called *hallow fair*, and the *trysts* of Falkirk, for Highland cattle, are all greatly conducive to the accommodation of our farmers, especially for purchases. Markets are likewise held at Dunse twice a year for hiring hinds, herds, and half yearly servants, and before harvest yearly, for hiring shearers or reapers. Almost every trifling village in the county has its fair twice a year, at which no business of any importance is transacted, and the only result is some merriment in the evenings.

SECTION IV.—WEEKLY MARKETS.

LAUDER, Dunse, Greenlaw, and Coldstream, and several other small towns and villages, have a kind of weekly market, chiefly for butcher meat, butter, and eggs. But Berwick is the principal corn market for the great arable district. Part of the upper Merse frequents Kelso market, and the oat-meal made in Lauderdale goes to Dalkeith market, in Mid-Lothian.

Grain of all kinds is universally sold in Berwick market, and at Kelso by sample; is delivered with all convenient speed after bargain; and is paid for next market day after delivery, or the one next following.

The weekly market of Morpeth in Northumberland, though fifty miles from this county, is to it of infinite importance, as affording a continual large demand for fat stock of all kinds, and is accordingly regularly frequented from this county, either by the farmers directly, or by the intervention of middle men, called jobbers. The fat cattle and sheep sold at Morpeth market are invariably paid for in ready money, which is likewise the general rule at all fairs. Jobbers usually have credit for a short time, from one journey to another. It appears that a profitable and useful business might be established, without risk, by a few persons undertaking to sell at Morpeth for farmers on commission, sending their drovers at stated periods round their customers to

collect fat stock, and calling themselves every fortnight to settle accounts. Such factors ought to be bound under penalties, with satisfactory bondsmen, never to deal on their own account. In the present establishment, many farmers, who feed extensively, frequent Morpeth market from this county every week for a continuance of months.

SECTION V.—WEIGHTS AND MEASURES.

1. By the treaty of union between England and Scotland in 1707, the legal standards of England for weights and measures of all kinds, were stipulated to become the standards of the whole united kingdom of Great Britain, in all time thereafter. Though this excellent regulation has the full force of law, and has now subsisted for an entire century, it has been completely eluded hitherto, in both kingdoms of England and Scotland. Every district and market in both still persist to use their customary measures, especially for grain, and their old weights for the purchase and sale of various commodities.

To reduce all these varieties to the legal standards over the whole united empire, were assuredly a most useful measure, as facilitating commercial intercourse; but the means of its attainment belong more properly to the magistrates of counties and towns, to enforce existing legislative provisions, than to the agric lt ral interest

interest separately. Were, however, the farmers to see their own interest clearly in this matter, they might easily bring about the change, if assisted generally by the magistracy. All that seems necessary to effectuate the purpose is, that the farmers should agree, and the magistrates enforce in quarter sessions, that, from and after a fixed day, all bargains should be made in the standard weights and measures; that all contraventions of this order and agreement should be punished by fines; and that every person continuing to possess any weights or measures differing from the legal standards, should incur forfeiture of these, and be subjected to penalties, increasing on repetition.

Not many years ago, by firm co-operation, the farmers of this county abolished an old custom of delivering one boll of grain to the score, without price, in addition to what they had bargained for with the corn merchants and millers; and one sheep to every score which they had sold to cattle dealers and butchers. Were this plan extended, and universally persisted in, for a very few years, there would cease to be any question about customary or local weights and measures. Scots money now only exists, hypothetically, in old deeds, and is utterly unknown in Scotland, in all ordinary transactions, and this upon no stronger grounds than the act of union, and general consent. The same general consent, grounded on the same fundamental law, would speedily eradicate the troublesome and multifarious customary and local weights and measures all over Britain.

The ancient legislature of Scotland established standards for weights and measures of all denominations, and appointed that they only should be used in all transactions

transactions between the subjects. Duplicates of all the standards were committed to the custody of the magistrates of certain towns, and from them all other towns were to procure or verify their particular duplicates. To Lanark was confided the custody of the standard stone weight; to Stirling the standard jug, or half gallon; to Linlithgow the standard firlots; and to Edinburgh the standard ell.

A considerable number of years ago this subject came to be agitated before the Court of Session, the supreme civil Scots judicature; and by reference from that Court, a most intelligent memorial was drawn up by the late highly illustrious Mr John Robison, professor of mechanical philosophy in the University of Edinburgh. Referring to that excellent memorial for precise information, the following representation of the customary weights and measures of Berwickshire, as compared with the legal standards of England, will, it is hoped, be found sufficient for the present purpose. There are, however, some causes of want of perfect uniformity in the customary units, which preclude absolute accuracy in comparison, and which will be incidentally mentioned.

2. It does not seem necessary to institute a rigorous comparison between the ancient Scots acre, and the standard measure of England, as the latter is almost universally now used in Berwickshire. Yet, as in the western parts of the county, the old Scots acre is at least spoken of, some notice of the difference between the two measures may be proper.

For ordinary purposes of comparison the Scots acre may be very conveniently assumed as equal to an acre and a quarter of English statute measure. But without entering critically into the elementary composition of each,

each, as founded upon the difference between the English and Scots inch, foot, and yard, it may suffice to say that, according to the best sources of information, 7869 Scots acres are exactly equal to 10,000 English acres; or, that one Scots acre is equal to 1.27 English acres, and a very small fraction more; the true proportion is, as 1 to 1.2708095; and the reverse, or one English acre, is equal to .7869 parts in 10,000, of the Scots acre.

3. As the measures for corn are founded upon the liquid measures, it seems necessary to mention these first. Differing very considerably from England, in regard to the standard measures of capacity, Scotland employed anciently one standard pint and gallon only for all purposes; while in England there are at least four different standards, very dissimilar from each other, the wine, ale, dry, and corn measures. It would lead to unnecessary and abstruse calculations, to follow out these closely, in their comparisons with the standard Scots measure; it may therefore suffice to enumerate the several gallons, and their cubical contents in standard English inches.

	English cubical inches.
English wine gallon is equal to	231
Ale gallon	282
Gallon, dry measure	268 4/7
Winchester corn gallon	272 1/4
Scots gallon, for all purposes	840

The Scots gallon is divided into eight pints; half a Scots pint is called a chopin; half a chopin is a mutchkin, which is farther divided into its half and quarter, which last is called a gill. The Scots mutchkin is usually considered as equal or similar to the English wine pint; but is considerably smaller, the English wine

pint

pint being $28\frac{7}{8}$ cubical inches, while the Scots mutchkin is only $26\frac{1}{8}$ cubical inches. In Berwickshire, and probably over all Scotland, wine and spirits are measured by the English wine gallon and pint, and malt liquors from the brewer by the Scots gallon and pint.

4. The strange diversity in the measures used for the sale of grain, both in England and Scotland, varying in every district, occasions great and unpleasant uncertainty in the results of agricultural communications, and produces great difficulty in forming comparisons of seed produce and prices, as referring to different districts. In the whole of this report, all measures of grain that had occasion to be mentioned, have been uniformly reduced to standard Winchester bushels: Yet it seems incumbent to explain the nature of the customary grain measures of the county, and their relation to the standard measures of England and Scotland. It has not, however, been deemed necessary to institute a critical examination of the measures, and their mutual relations upon rigidly strict calculations, but merely to give a distinct comparative view of their relative proportions, upon popular grounds, according to the best authorities. It will appear in the sequel that the size of the customary measures are too loosely regulated, almost at the pleasure of those who use them, to have admitted of a rigid series of calculations on the subject.

By the old Scots law, as already mentioned, the standard measures for grain were committed to the custody of the magistrates of Linlithgow; and owing to some cause or opinion, not now easily ascertainable, two distinct corn standards were appointed, one for measuring wheat, rye, beans, and pease, the other for barley and oats. The standard of each is called a firlot, *quasi*, fourth

fourth lot, or quarter part, of the boll, which latter, like the English quarter, is the customary unit of denomination in Scotland, for all sales of grain. For larger quantities an imaginary chalder, consisting of 16 bolls, is, or rather was, used in Scotland. Generally speaking, the firlot measure, whether for wheat or barley, is divided into four pecks, and the peck into four forpets, or fourth parts, the smallest denomination in corn measure, likewise called *lippies*. But, from some unaccountable singularity in Berwickshire, its customary firlot is only divided into three pecks. Hence the Berwickshire forpet is only the 12th part of the firlot, instead of the 16th part. By another singularity, equally unaccountable, Berwickshire only employs the barley measure for all kinds of grain.

The proportion between the two standard Linlithgow measures, already mentioned, and the standard Winchester measure of England, is such that the Linlithgow wheat or peas boll is equal to 509 parts in the 1000 of the Winchester quarter, or to 4,072 Winchester bushels; and, consequently, may be popularly assumed as half a Winchester quarter. The Linlithgow barley boll is equal to 744 parts in the 1000 of the Winchester quarter, or to 5.952 Winchester bushels. Consequently the Winchester quarter is equal to 1.959 Linlithgow wheat bolls, and to 1.342 Linlithgow barley bolls.

In Berwickshire, as already mentioned, only one measure is used for all kinds of grain, which is presumed to be the Linlithgow standard barley measure; but, in reality, the customary boll of Berwickshire is so much larger, that it is equal to 1.048 Linlithgow barley bolls, or to 1.529 Linlithgow wheat bolls. It is consequently equal

equal to .779 parts in the 1000 of the Winchester quarter, or to 6.237 Winchester bushels. In ordinary language, and for ordinary comparisons, it is customary to say that the Berwickshire boll contains six Winchester bushels; but it is really near four per cent. above that estimate. In all the particulars, however, of seed and produce, mentioned throughout this report, the Berwickshire boll has been uniformly considered as six Winchester bushels, which is sufficiently near for such purposes; and it would have occasioned the employment of unpleasant fractional parts to have reduced these to the exact truth, without any useful consequence.

In the western parts of Berwickshire, adjoining Roxburghshire, and frequenting Kelso market, the Roxburgh customary measures are employed, of which there are two kinds, as in the Linlithgow standards, for wheat and barley, but differing most materially from them.

The Roxburghshire wheat boll is equal to 1.294 Linlithgow wheat bolls; to .659 parts in the 1000 of a Winchester quarter; or to 5.279 Winchester bushels. The Roxburghshire barley boll is equal to 1.330 Linlithgow barley bolls; to .990 parts in the 1000 of a Winchester quarter; or to 7.920 Winchester bushels. It has not been deemed necessary to complicate this account, by comparing the Roxburghshire with the Berwickshire measures; though that may be done most readily by means of the data already established.

In Berwick market, the great mart of Merse grain, all kinds of corn are sold and delivered by the customary Berwickshire boll, already particularly explained, which is there called the *old* boll; as another customary measure is used farther south, in Northumberland, which is understood to contain two Winchester bushels,

and

and is there called the *new* boll. But, having no connexion whatever with this county, it has not been considered necessary to inquire into its real dimensions.

Although the proportions given above are those of the customary standards of the county, as regulated by its magistracy, there still remain considerable inequalities in the individual firlots used for measuring grain; owing partly to the clumsy inaccuracies of ordinary workmen, partly to the want of attention on the part of the police officer, appointed for examining and stamping the measures belonging to farmers. Besides which, some persons use measures considerably larger than the customary standard of the county, that they may boast of getting a higher price at market than their neighbours.

Upon the data here assumed, respecting the customary measures of grain and land, which have been carefully calculated upon the most authentic information which could be procured, a set of tables have been constructed, which will be found in the appendix, for making various comparisons and conversions, respecting the comparative prices of grain, as measured by the Berwickshire and the Winchester standards; the compararative rents of land, as measured by the English and Scots acres; the comparative produce from the acres, and the seed required for each, according to both measures of grain.

5. Ship-borne lime, imported only at Eyemouth, is sold unslacked by a customary lime boll, which is understood to be only equal to the East Lothian peas boll, or about half a Winchester quarter. Lime and coals from Northumberland, or rather North Durham, are understood to be delivered at the coal pits and lime kilns

kilns by the same measure, but in so very unsatisfactory and uncertain a manner, more especially coals, that no one knows with any decent certainty what he pays for. If a carter objects to the measure offered at the coalleries, he immediately loses his turn, and is thrown last of all those in waiting. Hence he may be many hours detained, and fare no better, or even worse than at first, or may even be constrained to go home unsupplied. At Eyemouth, where alone ship-borne coals are to be had, they are delivered by the legal ton of twenty hundred weight.

6. In Berwickshire, potatoes are usually sold by measure. Six fills of the corn firlot up to the edge of the wood, or a little higher, called *sleaks*, or streaks, or four fills heaped by hand as high as they can go, called *heaps*, are counted as one boll; being about nine Winchester bushels, and supposed equal to 34 English stones. In Berwick township, the universal custom is to give 40 English stones as a boll of potatoes; which must be skreened or riddled, to remove the soil, and to separate the small potatoes, which are sold separately at a lower price. When shipped for London, 28 hundred weight form the customary ton in that trade.

7. The only wood measure known in the county, is the solid foot, as used for the sale of foreign timber. Where the home timber is sold unsquared, the well known tables and rules of Hopus are employed for reducing it to the square, and allowing for bark. Plantations have not hitherto arrived at such age and extent as to have introduced any particularities into the measurement of timber; and chord-wood is utterly unknown.

8. There are no less than four different customary weights, used for different purposes, in this county; avoirdupois, Dutch, tron, and wool, of which each in their order; and to these are added an account of some other customary weights used in Berwick.

a. The legal English *avoirdupois* pound of sixteen ounces, is universally used in this county, and probably over all Scotland, as well as England, for the purchase and sale of all groceries, and of what are termed merchant goods of all kinds. In this denomination, the hundred weight, containing 112 pounds, is divided into quarters of 28 pounds each, and these into stones, or half quarters, of 14 pounds.

But in this county, and in most parts of Scotland, an anomalous stone of 16 pounds is at least talked of, under the mistaken name of the English stone, perhaps owing to the ancient customary weights of Scotland, to be described in the sequel of this article, having all that number of their own peculiar pounds in their stone weights. The legal stone of 14 pounds, or the half quarter hundred weight, is commonly called in Scotland jockey weight, or the horsemans stone.

The commerce of gold and silver is too trifling in Berwickshire, to warrant any notice of *troy* weight; except merely to say that the apothecaries in Scotland, as in England, ought to use it in the composition and doses of medicines.

b. In the *Dutch*, or Amsterdam weight, which seems to have been the particular kind most generally adopted in Scotland, the pound is very nearly equal to seventeen and a half avoirdupois ounces. This weight is used all over the county, for the sale of butcher meat, except at Ayton and Eyemouth, whose butchers frequent Berwick market, and have been accustomed to English

weight. The stone of this customary Dutch weight, containing 16 of its own pounds, amounts consequently to seventeen and a half avoirdupois pounds.

By law, oat-meal is bought and sold by weight in Scotland; and the statutory boll of oatmeal weighs eight Dutch stones, which are equal to 140 avoirdupois pounds, or ten English stones. For retail, this boll is divided into sixteen pecks, each weighing half a Dutch stone, or eight and three quarters avoirdupois pounds; yet, in Berwickshire, it is customary to sell oatmeal in retail by the peck measure. This is extremely improper, and somewhat unjust; as in this way, no accurately fixed quantity can be ascertained, for, by slight of hand, in filling the measure, the poor, who alone purchase by retail, are liable to be imposed on.

c. *Trone* weight, the pound of which contains twenty-two and a half avoirdupois pounds, is used for the sale of butter and cheese made in the county. The stone of this weight contains sixteen of its own pounds, or twenty-two and a half avoirdupois pounds, and is used for weighing hay; though in common practice, an English hundred weight is employed to weigh each truss or bundle, and is counted as five hay stones. In this mode of weighing, which is sufficiently precise, 100 Scots stones of hay are equal to one ton, or twenty hundred weight; and 90 stones are equivalent to the London load of 18 hundred weight.

In the township of Berwick, the customary hay stone contains 24 English pounds.

d. *Wool* weight, or as it is sometimes called *weavers* weight, contains twenty-four avoirdupois ounces to its pound, divided into sixteen of its own ounces. Its stone contains sixteen of its own pounds, and is equal to twenty-four avoirdupois pounds. In the county of Berwick,

Berwick, and it is believed all over Scotland, and all over the north of England, this weight is employed for the sale of wool.

e. In Berwick market, fresh butter is sold by a customary pound of 18 English ounces; while in the country markets, the *tron* pound of twenty-two and a half ounces is used. The legal firkin of 56 English pounds is universally used for salt butter, but usually a pound or two heavier to allow for brine.

f. Fresh salmon, a principal staple of Berwick, a considerable part of which comes from fishings within this county, is sold to the coopers, or salmon dealers, by a customary stone of eighteen and three quarters avoirdupois pounds.

9. Though not required in the plan for the reprinted reports, some short notice may be taken of the Scots measures of length. These, in Berwickshire, are for the most part the same with the legal standards of England. The old standard Scots foot and inch were sensibly larger than those of England, insomuch that 180 Scots feet were equal to 185 English feet; consequently the Scots yard, or ell, as it is usually called, is exactly equal to 37 English inches, or a yard and an inch. Except as regulating the legal reel for winding linen yarn, this measure is not known to be used in Berwickshire; yet weavers, in selling linen, universally interpose the breadth of their thumb in addition to every yard.

The actual composition of the Scots mile is unimportant, being now entirely disused, and superseded by the English statute mile of 1760 yards. In Scotland, roads and distances, within memory, were estimated by the computed Scots mile, which, on measuring the

roads, was found to be nearly an English mile and a half.

In country labour, contracted for by measurement, as hedging, ditching, draining, and road making, the work is measured by a rood of six yards or eighteen feet. Formerly this rood contained six Scots ells. In the higher parts of the county, the rood is said to measure seven yards; and it appears, from the information given respecting the new post road already inserted, that the rood of seven yards was employed in arranging the contracts for its formation. In building fence walls, or stone dykes, usually four feet and a half high, and a turf coping, the rood in length is six yards. In substantial masonry of stone and lime, contracted for by measurement, thirty-six square yards in the face or surface, by two feet thick, is considered as one rood. Thicker walls are calculated upon that proportion; but those that are thinner than two feet are not proportionally reduced in price, as taking considerably more labour in proportion.

10. It may be proper to mention a material difficulty, in the way of abolishing all customary measures of grain, and reducing them to the legal Winchester standard. The stipends of the Scots clergy, and the reserved rents of lands held feu, are very generally payable in grain, or in its value, as converted yearly into money by the fiars, which will be afterwards explained. As in these cases, the quantities payable have all been regulated upon the customary measures, stipendiaries and superiors of land might suffer a defalcation of income, by conversion into measures of a smaller capacity. This difficulty might be obviated by accurate tables of conversion, calculated to all the customary measures; but might

might still be attended with some inconvenience, and even productive of ill will and legal dispute. But no improvements of importance would ever be effectuated, if every difficulty were to occasion dismay and interruption.

11. A proposal has been in agitation, for selling all grain by weight, instead of measure, under the notion that it would be a much fairer criterion of value. But, as the value of grain, between buyer and seller, is merely relative to what it will sell for again, or what it will produce when manufactured, considering both quantity and quality, the proposed alteration seems more speculatively ingenious than practically useful. Every corn buyer, whether merchant, factor, or miller, must be supposed fully conversant in the weights and qualities of grain, by inspection and handling, and capable of regulating his purchases by attention to these circumstances, united to his knowledge or opinion of the markets where he is to sell again; and he must be at least as well acquainted with all these circumstances as the farmers are from whom he buys. Besides, the comparative values of grain are to be judged of by a combined view of the relative weights and measures, not by either separately, and a fixed weight of inferior quality is by no means equal in value to the same weight of superior quality. As well might it be enacted that all live stock should be sold by living weight, because butchers have to sell again by weight. Both stock and grain have offal, different according to qualities; and buyers must make themselves conversant in the nature and qualities of both.

SECTION VI.—PRICE OF PRODUCTS, &c.

In this section of the plan for the reprinted reports, it is required to compare the price of products with the expences attending their production. This would lead into complicated and abstruse political arithmetic, for which the reporter has not been able to procure any tolerable data; so that any thing he could here advance on the subject would necessarily be entirely hypothetical, and absolutely unsatisfactory. In the conduct of a farm, complicated in an infinite variety of circumstances, no farmer thinks of keeping such accurate books, as to be able to state circumstantially, or even by approximation, the expence incurred by each particular product, and consequently cannot rigidly balance the price received, with the expences of production. All that he endeavours, or can accomplish, is to take his farm as cheap as he can, to work it to the best advantage, with every attention to economy, and to sell his productions as well as possible in the current markets. Their books, were they laid open, which cannot be expected, would merely shew the general expences and receipts of the year, and might be balanced by comparing the inventories of stock of each succeeding year. In some former parts of this report, particularly in chap. iv. sect. vii. such information as the reporter considered himself

himself warranted to hazard on this subject has been already given.

SECTION VII.—MANUFACTURES.

1. The only manufacture of any importance, within the county, is that of paper, at Broomhouse, Ayton, and Allan-bank paper mills. These three probably give employment to 200 individuals, not including the unemployed wives and infants of the workmen. They pay above L.4000 yearly of Excise duties; and may manufacture paper to the value of above L.25,000 annually, the far greater part of which goes to London.

The manufacture of woollens and linens within the county, is so small as not to merit consideration; being confined, in the former, entirely to coarse goods for ordinary use; and, in the latter, to household linens, for farmers and labourers families. The distance and consequent expence of fuel, is rather hostile to the introduction of the woollen manufacture, for which the county affords ample materials; yet the example of a flourishing manufacture at Gallashiels, a very short way from the extreme western part of the county, gives full warrant for believing that it might succeed here.

2. The earnings of journeymen, in the paper manufacture in this county, at present, are three shillings a-day of regular pay, besides lodging and coal money,

and some small allowances for extra jobs. Hence each man may receive about L.50 yearly. Women, boys, and girls, are employed in various branches of the manufacture; and earn from sixpence to a shilling, or even eighteenpence a-day. The earnings of families of paper-makers must depend upon their numbers and ages capable of working, and vary accordingly from a guinea to two guineas weekly.

3. Nothing precise can be stated respecting the rise of rent, in consequence of manufactures, they are so few in number; and the land rents of the country have been rising progressively ever since their establishment, so that it is impossible to say how much of the present rent, paid in their immediate neighbourhood, may depend upon them. But it is well known, in other parts of Scotland, especially about Glasgow, that numerous manufacturing population has induced very high rents, upon very bad lands; and it must always produce that effect, from the demand for a vast variety of articles of provision, and the accommodation required for habitations, gardens, potatoe grounds, milk, and horses.

4. A very mistaken prejudice has prevailed among some country gentlemen, against the introduction and encouragement of manufactures, as tending to increase the expence of maintaining the poor. In the paper manufacture, with which the reporter has been a good many years intimately conversant, the great proportion of hands employed consists of boys and girls, who have constant work in all seasons, and in all weathers. When their times of servitude expire, the boys become journeymen, and either fill up the blanks in the mills where they are bred, or travel in quest of work. The girls go out to service as they grow up, and are replaced by others.

others. In fourteen years experience, the reporter can confidently assert, that the poors fund of Ayton parish, where his mill is situated, have been materially relieved, through the employment of young people at his mill, who must otherwise have gone upon the parish; though two very alarming dearths, almost approaching to famine, have occurred in that period.

Perhaps one of the greatest inconveniencies which agriculture experiences at present in Berwickshire, is owing to the want of sufficient population, for carrying on its operations, under the improved system of husbandry. This evil will naturally cure itself in time, by the encouragement which ample wages afford to marriage and population: But the assistant encouragement of manufactures would assuredly contribute to the same desirable end; not to insist upon the great advancement which agriculture would necessarily derive, from having the consumers of its produce directly at hand; every quarter of grain, or pound of beef or mutton, which is sold for home consumption, must sell higher than that which has to pay the accumulated expences of transit to distant markets, and the various profits and commissions of the several hands which it has to pass through; besides, the great addition of manure, procurable from increased village population, for adding fertility to the soil, and the increased demand that would take place, for small portions of land, for the accommodation of the manufacturers. Taken on the whole, there can be no doubt that, in a flourishing manufacturing district, especially on the principles of the Scots poors laws, the value of land would increase at least in a centuple proportion to the probable increase of burthens for supporting the infirm poor, for such

such only are entitled to assistance in Scotland. Without manufacturers, there can be no commerce or navy, the supports of the glory, independence, prosperity, and freedom of the British Empire.

Almost every Scots journeyman paper-maker is a member of a very flourishing benefit society, long established in the neighbourhood of Edinburgh; by means of which they are supported, at their own joint expence, when disabled by old age, sickness, or accident; and from that fund their widows have a regulated allowance; and the funerals of members, and of their wives and widows, are defrayed, or very materially assisted. The establishment of benefit societies, under well devised regulations, ought to be encouraged throughout the whole united kingdom, by every possible means; and it has often forcibly occurred to the reporter, that the legislature might, with great propriety, make it obligatory upon every subject of the Empire, to become a member of some institution of this kind at a fixed age. This subject will be resumed in the tenth section of this chapter.

SECTION VIII.—COMMERCE.

The very insignificant commerce of Berwickshire has been already sufficiently adverted to, in the first chapter of this report. It is entirely confined to imports

ports of direct consumption, and so far as this county is concerned, to the export of grain coastways; and even that is chiefly confined to Berwick. The effects of this commerce upon agriculture cannot be appreciated particularly; but must necessarily be highly beneficial, as continually affording a demand for disposable produce, and supplying the necessary timber, iron, and merchant goods, that are required for the accommodation of the various classes of inhabitants.

SECTION IX.—FISHERIES.

THE fishery upon the coast is not of very material importance. It gives employment to upwards of an hundred fishermen, at eight small fishing stations, with about 20 boats. Fish carriers, called *cadgers*, purchase from the fishers, and distribute the white fish, codlings, haddock, whitings, skate, halybut, and flounders, and a very few turbot, into the inland country, and often to Edinburgh. Cod and ling are mostly contracted for, by the season, at a fixed price, by a few fish curers, who salt and dry them in favourable weather, and barrel them at other times.

The herring fishery on the coast is exceedingly precarious, and has been almost entirely idle for several years, owing to the herring shoals having changed their migratory directions to other quarters. A few red herring houses at Eyemouth were once well employed;

ployed; but have been entirely empty of late years, for want of herrings.

Some boats or small vessels go annually to the herring fishery on the coast of Caithness, which will probably be greatly increased in value and extent, by the new harbour now erecting at Wick in that county. Staxigo is generally their rendezvous at present.

The salmon fishery in Tweed is of considerable importance, but the principal share of it belongs to the township of Berwick, and the opposite side of the Tweed. From Berwick bounds, up to where the fishery ceases to be important, half of the river belongs to England, and the other half to Scotland. And, as the three lower miles of the river, by far the most important, belong entirely to England and Berwick, and half of the rest, and as the whole active direction of this fishery centers in Berwick, it peculiarly belongs to a report of that township to furnish a detailed account of this subject.

Ten years ago, Mr Home estimated the rental of salmon fishings on the Berwickshire side of Tweed at L.1500 a-year. Having no information, or data, on which to verify that estimate, or to calculate the rents in 1808, it has not been deemed adviseable to give a hypothetical view of the subject; and inquiries have not been satisfactorily answered.

The quantity of salmon caught in Tweed is very considerable, and gives employment to a number of fishermen and others, but mostly resident in Berwick and England. Formerly it was all pickled or kitted, after being boiled, and sent to London under the name of Newcastle salmon. Some was sent fresh to London during the cold weather of winter and spring. Now the whole

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is sent fresh to London, at all seasons when the fishery is open, packed in deal boxes, stratified with grossly pounded ice. This employment of ice was first essayed by Messrs Richardsons of Perth, on the suggestion of George Dempster of Dunnichen, Esq. who had accidently read that such a practice was not unusual in China. The consequences have been great, in augmenting the price of salmon, and the value of the fishings, but has almost banished this article of food from the inhabitants of the environs of the fishery, except as an expensive luxury. Within memory, salted salmon formed a material article of economy, in all the farm houses of the vale of Tweed, as a considerable portion of their winter stores for family use, insomuch that in-door servants often bargained that they should not be obliged to take more than two weekly meals of salmon. It could then be bought, fresh caught in summer, at 2s. the fish stone of nearly 19 pounds weight. But, from the introduction of ice, enabling the whole to be sent fresh to London at all times, the price hardly ever falls now below 12s. the stone, and is often 36s.; sometimes two guineas.

The salmon fishery, including Berwick bounds, and the English side of the river, employs about 70 small boats, and nearly 300 fishermen. All the fish are sold to a very respectable fraternity of traders in Berwick, named *coopers*, from their former business making kits and boiling the fish, which is now entirely discontinued. By them, the salmon are packed in ice, and sent to London, to be disposed of by factors on commission.

A number of excellent vessels belong to Berwick, for the purpose, principally, of carrying on the trade of salmon to London, but which likewise carry goods

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of all kinds on freight. These vessels were formerly mostly smacks, having wells for carrying live trout and lobsters to the London market; but the wells were found to occupy more tonnage than the trade in trouts was worth, so that of late they have been all built with dry bottoms, and are now called packets. They are from 87 to 142 tons registered burthen, and are navigated by 10 or 12 men each. Being sharp built, cutter rigged, carrying a vast deal of canvass, and strongly manned, they can keep the sea in all weathers, and make amazingly quick voyages and returns, often going 16 voyages to London and back within the year. Upon the whole, they are probably the best built, best found, and best manned coasters in Europe.

During 15 years the reporter has probably made 1000 shipments from Berwick to London, in these packets, and though almost the whole of that time has been war, he has only suffered two losses from the enemy, and none at all by sea hazards, even although winter is by far his busiest season. Hence the risk of sea and enemy cannot be considered as exceeding 5s. on the L.100, or one quarter per cent. It is believed that no trade in the world can produce so strong an instance of safety.

Many of the packets now go from London to Leith with goods, and return to Berwick for salmon and goods. This has rather lessened the number of trips, but answers the purpose of the proprietors, in the acquisition of freightage for profit. These packets belong to two shipping companies. The *old* company, composed of the coopers, has 12 vessels, which are employed as already mentioned. The *new*, or *union*, company, erected by subscription in 1795, has 7 vessels; but it has of late entirely confined itself to the carrying trade between

tween London and Leith. The vessels belonging to the *old* shipping company are from 88 to 137 tons register, and amount in all to 1440 tons. Those of the union company from 87 to 142 tons, and register in all 874 tons. The whole are armed by Government, upon the new *non recoil* plan, with carronades, and some of them have beaten off privateers. In case of emergency, fully manned by sea fencibles, these vessels might prove of essential service against the enemy.

SECTION X.—THE POOR.

1. As the Scots poor laws have been particularly adverted to in several of the reports from this side of the borders, it seems altogether unnecessary to enter into a minute detail on the subject in this place. No person capable of working ever dreams of applying for parochial assistance, for his own support, or the maintenance of his family. Under the pressure, indeed, of uncommonly calamitous seasons of dearth, approaching to famine, as in the winter 1799—1800, the industrious inhabitants of this county received some aid, by means of voluntary contributions and extraordinary assessments, to enable them to provide the indispensible necessaries of life. This extra fund was applied in the purchase of oatmeal, which was served out at reduced prices, in regulated weekly quantities, according to the numbers and circumstances of each family.

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Great numbers of the labouring people and tradesmen belong to benefit clubs, by which they have the honourable satisfaction, during youth and health, to lay up the means of supporting themselves, when laid aside from work, by accident, illness, or old age.

Widows, with families of young children, unable to work; the very few wives who may have been abandoned by their husbands, in similar circumstances; natural children while infants, abandoned by their fathers, and whose mothers are unable to support them without help; and old people, incapable of working, who may not have made any accumulation in their better days, and who do not belong to benefit societies; these are alone the objects of parochial assistance, and are helped in the most frugal manner, in strict and rigid relation to their absolute necessities only.

2. The annual receipts and expenditures of the poor cannot be ascertained with any tolerable approximation towards an average account. From 1s. to 2s. 6d. or 3s. a-week, is allowed to such as are in absolute or relative need, consideration being always had to their actual circumstances, and whether or not they are still able to assist in their own support. These regular allowances are accorded to them, on application, by the heritors or landed proprietors of each parish, who assess themselves for the purpose; and occasional aids, in circumstances of emergency, are distributed by the ministers of parishes, from the funds arising from collection at church. All are relieved at their own houses, there being no work houses in the county.

3. The funds for relieving the poor are two-fold. The voluntary contributions received at church, which are under the management of the parish ministers, as-

sisted by the kirk sessions, and which serve for occasional assistance to such as are in immediate want. The other, and principal fund, arises from an assessment upon the land rents and houses in each parish, paid in equal proportions by the proprietors and tenants, which is laid on by parochial meetings of the heritors or proprietors, and is distributed under their direction. The parish schoolmaster is usually the collector and treasurer of both funds; and the minister most commonly is very principally consulted in their distribution, as best acquainted with the wants of his parishioners.

According to Mr Home, the poor receiving relief within the county from parochial funds, on an average of ten years before 1784, amounted to 383, who received L.886. 17s. yearly among them, or L.2. 6s. 11d. each. The average of the ten years immediately subsequent, from the same authority, was 444 poor, receiving L.1272. 12s. yearly, or L.2. 17s. 6d. each on the average. This last, it is to be observed, estimating the land rent in 1794 at L.112,000, as will be noticed afterwards, does not exceed 3d. in the pound rent.

The difference in these two averages for the two periods of ten years each, ending in 1784 and 1794, is not very material in itself, though the increase in the number of the poor is considerable, yet this might easily be accounted for from the increasing prosperity and population of the county itself, by which the additional burthen has been greatly more than compensated, insomuch that, without attempting any calculation, for want of perfect data to found upon, it is believed the rate of assessment upon real income will be found actually diminished.

It may suffice to give a particular view of the poor and poors funds of the parish of Ayton, where the reporter resides, having a population of 1453 individuals, and a land rent, as near as can be estimated, of L.10,750 Sterling.

There is no capital stock belonging to the poor, as the whole income is laid out yearly in the regular allowances to those who are upon the roll, in the purchase of coals during winter, for the most necessitous families, and in occasional relief to such as may be in immediate want, and are not upon the roll at the time.

During the year 1808, the amount of collections received in church, including dues of the pall or mort-cloth, and a tax of 1s. upon each marriage, amounted to L.26. 3s. 6d. The assessment for the same year was L.194. 6s. 8d. equal to 22 months cess or land tax, giving a total sum of L.220. 10s. 2d. This was divided, except the portion reserved for occasional relief, and the purchase of coals, among 33 poor individuals, regularly admitted upon the poors roll, in weekly aliments, or proportions fixed by the meeting of heritors, of 1s. 6d., 2s., 2s. 6d. or 3s., according to the relative necessities and infirmities of each. Besides which, the cottage rents of several of the paupers were paid from the reserved sum formerly mentioned.

The proportion of the assessment, for the poor, to the real rent of the parish amounts to a small fraction more than 4¼d. in the pound. One half of which being paid by the proprietor, and the other half by the tenant, leaves very little more than 2d. a pound to each. In 1290 the real rent was about L.4420, and the assessment L.35, not quite 2d. a pound in whole, or less than

than 1d. a pound on the landlords and tenants respectively.

In 1808 the poor relieved on the roll were 33, on a fund of L.220. 10s. 2d. giving an average of L.6. 13s. 7½d. for each. But no comparison of this circumstance can be made with 1790, as the number of poor, upon the total amount of funds, has not been stated in the original statistical account of the parish. It may be noticed, however, that the aggregate poors funds have risen since then, a period of only 18 years, from about L.40. a year to L.220. 10s. 2d. an increase of five and a half times the former amount. This is probably occasioned by numbers of old men, no longer able for the regular employment of hinding or ploughing, and by the discontinuance of thrashing with the flail, resorting to the village of Ayton, where they subsist as well as they can, by various jobs, till old age and infirmities compel them to apply for parochial relief. The operation of similar causes has produced similar increase of the assessments for the poor, in such other parishes of the county as have large villages, and consequent accommodations. The circumstance of being situated on the great line of communication between England and Scotland may likewise occasion the resort of reduced old people, who have spent their best days in England, to Ayton and Coldstream, where the assessments are said to be likewise rapidly increasing.

Such other information as may be procured respecting the poor, in the other parishes of the county, and for which earnest application has been made to the reverend clergy, will be inserted in an account of the statistical circumstances of the several parishes, so far as

can be collected, in one of the numbers of the appendix to this report.

4. It has been already stated, that no workhouses, or houses of industry, as they are called, exist within the county.

5. Many benefit societies, or box clubs, have their meetings at the principal towns and villages. In these, by the accumulation of very small quarterly payments, from 6d. to 1s. from each member, and by moderate fines of entry, labouring people secure to themselves a regular support at their own expence, when rendered unable to work by accident, sickness, or old age. Allowances are likewise given by these clubs for the funerals of members and their wives. These societies are mostly confined to tradesmen, or artizans of various denominations, and are usually called *trades boxes*. Husbandry servants and country labourers have not so generally entered into these *boxes* as they ought.

The advantages of such institutions, for maintaining the moral independence, and honest pride, of the lower classes of society, seem so obvious as to require no illustration; and the reporter is utterly ignorant of any disadvantages that have ever accrued from them, or are liable to happen. It might even be worthy of legislative wisdom to render it a legal duty of every subject of the empire, to become a member of a benefit society, upon attaining a particular age, including females. By this means the whole rising population of the county, paying an extremely moderate contribution, and entirely under their own guidance, would ultimately come to support themselves and each other, in cases of distress and old age. As such a system would finally supersede the necessity of a poors rate, or, at least, would very greatly

greatly reduce that tax, the original establishment of this universal system of benefit societies might, with great propriety, be assisted by certain proportional contributions from the presently established poor rates. The development of this system would lead to lengthened discussion, which does not seem admissible in this place.

The new system of pensions to the army will, in time, largely contribute to diminish the burthen of poor rates, and, if extended to the navy, would both farther assist in this very desireable end, and would, in time, secure a considerable volunteer force, always ready to man the British navy.

SECTION XI.—WIDOWS FUNDS.

As somewhat connected with the preceding subject, it may be mentioned that there is one widows fund in this county; but, from what the reporter has been able to learn, its fundamental establishment was so injudiciously calculated, by engaging for payments to widows vastly beyond what could possibly be afforded by the contributions, that it only requires a mere notice, as it must ultimately and speedily fall to the ground, unless radically reformed in the principles of its constitution. The great example of the ministers widows fund of the Church of Scotland, now verified in its whole plan, constitution, and calculations, by the successful experi-

ence of more than 40 years, ought to be carefully studied and imitated in all such institutions.

The present report does not warrant any detail of that most excellent institution, which owes its establishment and prosperity to the late Rev. Dr. Alexander Webster, one of the ministers of Edinburgh, to whom multitudes of widows and fatherless have been indebted for comfort and subsistence, and to whom thousands yet unborn, so long as our happy constitution in church and state shall endure, may look back with greatful veneration. The reporter, with affectionate eagerness, uses this incidental opportunity to commemorate a great and good man, and a true patriot.

SECTION XII.—POPULATION.

1. If they can be procured, tables of the births, burials, and marriages, of the several parishes of the county, shall be exhibited in the appendix, or will be extracted from that valuable work, hitherto unexampled in any age or country, the Statistical Account of Scotland.

2. Ten years ago, Mr Home estimated the inhabitants of the Merse at 20,075, and those of Lammermoor and Lauderdale at 9633, making a total of 29,708 individuals of both sexes, and of all ages, upon what authority does not appear; and arranged the whole population as under, which enumeration is here copied as not incu-

rious

rious, though, perhaps, not very rigidly precise in its data.

1. *Class.—Landed Interest.*

1. Resident proprietors or heritors, with their families and servants	1,470
2. Clergy and school masters of all denominations, with ditto	460
3. Tenants, with their families and in-door servants	3,240
4. Labourers of the land, with their families ...	15,455
5. Agricultural artizans, and their families ...	2,400
6. Brewers, and household trades, with their families and servants.....	260
Total of the landed interest ,.....23,275	

2. *Class.—Remaining inhabitants.*

7. Paper makers, and their families	220
8. Weavers, and other manufacturers and artizans, not agricultural, with their families	900
9. Salmon fishers, and their families	220
10. Salt water fishers and their families.....	325
11. Inhabitants of towns	4,629
12. Sundries nondescript	139
Total of these.....	6,433
General total	29,708

Anciently, the agricultural population, in the arable district, was collected in farm towns or villages, in which 10, 12, or more small farmers, with their rick yards, and outhouses and cottagers, were crowded together. These villages are now deserted, so far as farmers and their immediate servants are concerned, and farm houses, with their steads, or farm yards, buildings, and rick yards, and cottages for married servants, are now placed centrally on every farm. Many of the old farm towns, the ancient abodes of idleness, poverty, and dissipation, have now become clean country villages, filled with industrious mechanics of all kinds, shopkeepers and labourers, who work for the surrounding farmers. Through the consequences of this great change, in spite of the beautifully poetical complaint of Goldsmith, population has increased, and is increasing: but poets have an imprescriptible right to deal in fiction.

In a statistical table of Scotland, published in one of the Edinburgh almanacks for 1806, as taken in 1801, according to act of Parliament, the population of Berwickshire was stated at 30,621, which does not materially differ from the account given by Mr Home as the amount in 1797, giving an augmentation of 913 in ten years. If both calculations be accurate, the yearly augmentation in the population may be assumed at 91 individuals, or one for every 331 persons; and it is not improbable, from the recent introduction of vaccination, that the population will go on increasing, in future, in an accelerated ratio. Great prejudices existed among the lower orders against small-pox innoculation; and using no precaution to avoid infection, multitudes of infants fell sacrifices yearly to that cruel disease. These

prejudices

prejudices have vanished before vaccination, which is now almost universally followed, and the consequences must be vastly beneficial.

Without presuming to vouch for the authority quoted, the following comparative circumstances of Berwickshire, in relation to Scotland at large, are extracted from the before mentioned statistical table, premising the number of inhabitants of the principal towns in the county, viz. Dunse, 2324; Coldstream, 1162; Lauder, 1000; Eyemouth, 800; Greenlaw, 600; Ayton, 529; Swinton, 357.

Comparative Table.

Scotland contains in square miles,	19,571,	Berwickshire 481 or 1-47th.	
Population of Scotland,	1,599,068,	Berwickshire 30,621 –	1-52d,
Valued rent of Scotland,	£.3,802,479, Sc.	Ditto £.178,365 –	1-21st,
Real rent of Scotland	£.2,341,955, Ster.	Ditto £.118,800 –	1-19th.

In

In the first chapter of this report, Berwickshire is only estimated to contain 446 $\frac{1}{4}$ square miles on the authority of Mr Blackadder, an eminent and accurate land-surveyor. The above mentioned sum of L.118,800 may have been the real rental of Berwickshire in 1801, but it will be seen hereafter, that its probable amount in 1807 was L.210,000; and in 1808, L.226,000.

3. So far as the reporter has any means of judging, the increase in the population of this county has depended upon the constantly abundant demand for country labour, in inclosing and draining, and in improved culture; by which, as already stated under the head of Labour, Ch. xv. sect. 1. every individual, young or old, capable of employment, is sure of constant work and ample wages. The county always raises greatly more food than is consumed by its population; and accordingly food is always to be had at market price. Cottages are in sufficient abundance, and permission can always be had to raise them, in the country villages, on payment of the ordinary rates of ground rents.

4. There is every reason to believe, that this county is, upon the whole, rather under than over-peopled, from a consideration of the continually progressive rise of wages, in greater proportion than the apparently fixed rise in the average prices of food. Any comparison of the population with the prices of wheat seems inadmissible, so far as Berwickshire is concerned, as wheat does not form the staple article of food among the labouring part of the community, although fast getting into general use among them.

5. Upon the whole, this county is extremely healthy. Formerly the agricultural parts of it, more especially the Merse, were much infested with agues, which is not now

now the case. This favourable change is owing, doubtless, to the thorough draining of all stagnant waters, in consequence of universal inclosure, and improved culture. Formerly too, it may be mentioned, that farm towns and villages were huddled together, usually in waste hollow places, and inundated in bad weather with putrid water, from the dung hills with which they were intermixed. Now farm steads stand separate upon every farm, in well chosen central situations, with the servants cottages in their neighbourhood, upon sound dry ground, where their inhabitants have not continually to inhale the putrid vapours of stagnant muck water, or dunghill drainings. The villages now, all unencumbered by farm-yards, stalls, stables, and dunghills, are open and free aired; and are mostly situated on the sides of hard made roads.

6. Having already detailed the food, and mode of living, of the labouring class of the community, in Chap. xv. sect. ii. it does not seem necessary to repeat the subject in this place. Their food chiefly consists of potatoes and oatmeal variously dressed, and seasoned by a very moderate allowance of fresh butcher meat, with some cheese and butter; and very little ale or spirits is consumed. It is needless to say any thing of the mode of living of the farmers, which is generally upon a decently genteel scale, which their successful and intelligent industry well entitles them to enjoy.

SECTION XIII.—FIARS.

As connected with political economy, and the agricultural circumstances of the county, it has been deemed proper to exhibit a short account of the fiars. By law, the Sheriffs of all the counties in Scotland are directed to take yearly proof, at Candlemas, of the average prices of grain and oat-meal, for the immediately preceding crop. This is generally done by means of a jury, before whom a number of buyers and sellers of grain are summoned, corn-merchants, millers, and farmers, and examined upon oath, as to the prices paid or received by them for the various kinds of grain. From this proof, averages are calculated for each kind, which are certified by the jury, and recorded in the Sheriff-court books. These average prices are called *fiars*, and regulate the conversion or payment in money of ministers stipends, and feu-duties, so far as these are fixed in grain or kind.

A table of the fiars of Berwickshire, for a considerable number of years, will be found in the appendix, which has been carefully reduced to English quarters and Sterling money; excepting the oatmeal, which is left in its legal boll of eight Amsterdam stones, or 140 avoirdupois pounds.

It may be proper to observe, that the reduction from bolls to quarters, for this table, has not been calculated upon

upon the rigid principles of comparison, instituted in giving an account of the weights and measures; but only upon the more simple and popular supposition, that one Berwickshire boll is equal to six Winchester bushels, and that a Lothian peas boll, in which measure the Berwickshire fiars are calculated for wheat and peas, is equal to half a Winchester quarter, or four bushels. In this looser mode of calculating, the comparison of years is equally accurate, in every respect, as if the more rigorous method of reduction had been employed.

That table may be considered, in some measure, as a scale of the advancement and retardation of the farming interest in this county. But to set that matter in a perfectly clear light, would farther require a similar table of the prices of wool and of live stock, both lean and fat; but which prices the reporter has no means of procuring. To give a full view of the subject, would likewise require a comparative view of the productions of grain, stock, and wool, on the same space of land, in the modern improved husbandry, and under the old imperfect culture; but which is utterly unattainable.

It must be noticed that the fiars only express the average prices of the several kinds of grains, and of oatmeal, for a limited period of each year, from Martinmas to Candlemas immediately succeeding; because, in that period, payments in kind are exigible.

Thus, it will be seen by the table of fiars in the appendix, that the average prices, as settled for crop 1807, were, wheat L.2. 15s. barley L.2. 2s. 8d. peas L.3. 2s. oats L.1. 12s. 8d. oat-meal L.1. 5s. 6d. whereas the actual prices in Berwick market, 13th June 1808, for the same crop 1807, were, wheat, L.4. 13s. barley

L.2. 17s. pease L.3. 4s. oats L.2. 14s. oat-meal L.1. 15s. all by the measures used in constructing the tables.

SECTION XIV.—TAXES OF THE COUNTY.

THOUGH not strictly connected with an agricultural view, it may not be incurious to give an account of the public taxes paid by this county, at different periods, the information respecting which has been communicated from unquestionable authority. This account, however, is limited to the taxes received by the collectors of the land and property taxes, and others under the commissioners of taxes. The customs form a mere trifle not worth mentioning. The excise taxes are so interwoven in the accounts of a large district extending beyond Roxburghshire, and into Dumfries-shire, that it was found impossible to separate those pertaining to this county; and, indeed, information was officially refused.

In the year 1783, the public taxes levied in this county were,

Window tax,.....	L.290	19	10
Inhabited houses,.....	33	9	6
Land tax, 8 months cess, besides L.31. 11s. 2d. for expences,.....	1870	19	8
Total payable to the state.....	L.2195	9	0

Besides

Besides which, there was collected, for purposes belonging to the county,

Part of the land-tax allotted for expences	L. 31	11	2
Bridge money; 10d. per L.100 Scots valuation,	74	6	4
Rogue money; 2 weeks cess for the police,	118	18	3
Fees; 2 weeks cess, for collector's salary, clerk, and officers of the commissioners of supply,	118	18	2
Total of this,	L. 343	13	11
General total,	L.2539	2	11

Some of the taxes, now termed assessed, were then levied by the Excise collector, of which no account can be now procured; but they were not very important, and would not probably swell this account beyond L.3000.

In the year 1801, eighteen years latter, the account stood as follows:

Houses and windows,	L. 1721	18	0
Inhabited houses,	73	13	8
Male servants,	406	10	0
Four wheeled carriages,	409	4	0
Two wheeled ditto, and taxed carts	88	4	0
Pleasure horses,	1089	8	0
Husbandry horses,	1683	0	0
Dogs,	53	10	0
Armorial bearings,	77	14	6
Hair powder,	69	13	10½
Horse dealers,	20	0	0
Total of consolidated taxes,	L. 5692	16	0½

Consolidated

Consolidated taxes brought over, -	L.5692	16	0½
Income tax, - - - - -	10837	19	11½
Unredeemed land tax, or 8 months cess	1387	17	4
Total payable to the state, -	L.17,918	13	4

Besides which, were collected for county purposes,

Excrescence from unredeemed land-tax for expences - - - - -	L.23	8	2 4/12
Bridge money; 20d. per L.100 Scots valuation; doubled - - -	148	12	8 6/12
Rogue money; one months cess, doubled	237	16	4 3/12
Fees; 2 weeks cess, as in former period	118	18	2 1/12
Total of this, - - -	L.528	15	5 2/12
General total, - - -	L.18,447	8	9 2/12

Of the cess, or land tax, to the yearly amount of L.483. 2s. 4d. had been redeemed at that period. The singular fractional figures are occasioned by all the taxes in which they occur being exigible in Scots money, here reduced to Sterling.

Besides these enumerated taxes, there are some others not communicated to the reporter, some of which have only been occasional; as for the expence of levying the fencible cavalry of the county in 1784; for raising the county quota of men for the navy; for providing clothing to the original volunteers; and for the support of militia mens wives. The rogue money, from which the necessary expences of the police in the county is defrayed, varies according to circumstances; but is not expected to become lower than as stated for 1801.

The excise, chiefly on malt, brewing, and paper, is the only other material article of public revenue derived from this county: But upon application to the proper officer, the collector of Excise, for a general account of the amount of this branch within the county for one year, it was found to be contrary to his instructions to give any information on the subject.

It has been already stated, that the income tax of 1801, produced L.10,837. 19s. 11½d. The property tax, as assessed for 1807, amounted to L.33,638; but as there are several deductions to be made from this, on appeals for overcharges, the real sum which will accrue to the revenue on this head from Berwickshire will only be about L.33,000.

The public taxes of the county for the year 1807 were,

Houses and windows, - -	L.3141	1	6
Inhabited houses, - - -	281	9	4
Male servants, - - - -	675	4	0
Four wheeled carriages, - - -	478	16	0
Two wheeled carriages - - -	207	18	0
Pleasure horses, - -	1385	18	0
Husbandry horses - - -	2245	15	0
Dogs, - - - -	197	10	0
Armorial bearings, - - -	56	14	0
Hair powder, - - -	48	6	0
Horse-dealers, - - -	15	0	0
10 per cent. addition on the above -	862	13	0¼
Gross total, Carry over -	L. 9496	4	10¼

Brought over -	L. 9496	4	10¼
Deduction for children, - -	218	19	7
Net total of consolidated taxes, -	L. 9277	5	3¼
Property tax, as already mentioned -	33000	0	0
Unredeemed land-tax -	1293	19	3¼
Total payable to the state -	L. 43,571	4	7

Add to which for county purposes,

Bridge money	L.148	12	8$\frac{8}{12}$			
Rogue money	475	12	8$\frac{5}{12}$			
Fees -	118	18	2$\frac{1}{12}$			
				L.743	8	7¼
General total - -				L.44,314	13	2¼

In this account of the taxes, levied for county purposes, it has been omitted to mention the excrescence from the unredeemed land tax, appropriated for expences of collection, which may be about L.20. It appears, from a comparison of the foregoing accounts, that, of the original land-tax of this county, L.1870. 19s. 8d. only L.577. 0s. 4¼d. have been redeemed, and that L.1293. 19s. 3¼d. still remains unredeemed. The very great increase of the county tax called rogue money, which has been quadrupled since 1783, or raised from L. 118. 18s. 8d. to L.475. 12s. 8d. has been occasioned by the great additional expence incurred for carrying the police regulations into full effect, and evinces a most praise-worthy spirit in the magistrates; who, being all gentlemen of landed property, have themselves to contribute

contribute their proportions to this useful and necessary tax. At least, a proportionable increase of the bridge money is much called for, that so very necessary an accommodation may be had in proper places, to which the present funds are quite inadequate. But this subject has been more particularly mentioned in the sixth section of the third chapter of this report.

CHAPTER XVII.

OBSTACLES TO IMPROVEMENT, & REMEDIES.

SECTION I.—PRELIMINARY OBSERVATIONS.

To this chapter, the reporter has judged it advisable to conjoin observations on the means of improvement, and the measures calculated for that purpose, as these last most naturally present themselves to the mind, while considering the obstacles themselves.

Respecting the obstacles to improvement, as arranged and enumerated in the plan for the reprinted reports, hardly any of them exist, in regard to the agriculture of the county, as has already been frequently mentioned in various preceding divisions of this report; yet it has been deemed proper to preserve the subdivisions of the plan, and to consider them cursorily in their order. Some other obstacles, not contained in the plan, will be adverted to in the subsequent sections of this chapter.

SECTION

SECTION II.—IN RELATION TO CAPITAL.

THE want of capital certainly operated, between twenty and thirty years ago, as a very material obstacle against the improvements of this county; but as rents then bore a proportion to the means of cultivation and amelioration, and as markets have since favoured the agricultural interest, rather more quickly progressive than the rise of rents, till very lately, the farmers, generally speaking, are now possessed of sufficient capital for carrying on their regular operations, and even for rapidly advancing their improvements to the utmost extent, consistent with prudence. At any rate, there seems no possible means of increasing agricultural capital but by the steady progression of judicious improvement, aided by prudent, yet liberal economy.

Towards the close of the American war, and for a year or two after the peace of 1783, at a time when the farmers of this county possessed very little capital, and when markets for farm produce of all kinds were unusually low, there was not only a long stagnation of improvements, but the farmers experienced the most distressing difficulties to keep their credit, and to pay their rents. Many at that time fell behind with their landlords, and some were entirely ruined; while others, who met with judicious indulgence, were able

afterwards to clear off all arrears, and to realise handsome independant fortunes. At that period, the whole property of the monied interest was locked up in the public funds, induced by the high rate of interest there, above 6 per cent.; and bankers almost entirely refused every species of accommodation whatever.

In the few years of peace and prosperity which succeeded that war, interest in the funds having fallen below four per cent. and the capital of the monied interest having been enormously increased, banking accommodations of all kinds became most unusually liberal; and farmers were thereby enabled to speculate upon improvements, which have turned out exceedingly successful, both for themselves, their landlords, and the country; and prices of produce have been regularly advancing, for all kinds of stock, rather faster than the advance of rents. In the year 1807, however, a degree of stagnation in sales took place, and still continues, more especially in live stock, that threatens injury to some of the lately taken high rented farms; and reports have been circulated, especially in a neighbouring county, that several instances have occurred of hesitation or refusal to complete bargains that had been entered into for new leases.

It is a well known fact, but which must be delicately noticed, that, during the peace after the American war, several country bankers and banking agents tacitly allowed fictitious, and even forged bills of accommodation to pass through their hands, without scruple, and are even said to have preferred them to regularly signed wind-bills. At that period fraternities of mutual accommodators, avowedly allowed each other to forge their respective signatures; it being always understood

that

that the discounter was liable to take up the bills when due, and that they were never to fall upon the real or supposititious acceptors and indorsers. The strong arm of the law was obliged, finally, to be interposed, to put an end to this dangerous and wide spreading evil.

During the present arduous contest, in spite of the enormous sums required by the state, the interest of the public funds has been preserved nearly on a level with that legally allowed in the private money trade, usually lower, in consequence of judicious financial arrangements and devices, that need not be here explained. Banking accommodations, therefore, have not suffered the same check as at the close of the American war, though often irregular, and always limited. But the increased affluence of the agriculturalists of this county, has enabled them to proceed with energy in their improvements, on the strength of their own proper funds.

SECTION III.—OBSTACLES FROM PRICES.

So far as prices are concerned with this subject, little can be stated here, as these must necessarily be regulated by the uncontroulable circumstances of abundance and scarcity of the several agricultural productions. It has been already mentioned, that the price of live stock

has fallen alarmingly below the relative circumstances of rents, in very lately taken farms. But there does not seem any circumstances of regulation, which could tend to remedy this evil, which it is to be hoped is only temporary; owing, probably, to overbreeding, in consequence of the previous regularly increasing high prices. The evil will naturally cure itself.

SECTION IV.—OBSTACLES FROM EXPENCES.

THESE, high and constantly increasing as they are, can hardly be considered as obstacles to improvement; as every expence incident to agriculture, in rent, cultivation, and amelioration, must necessarily be regulated by the demand for farms, the abundance or scarcity of horses and labourers, and the opinion of cultivators respecting the means of improvement, with the opportunities of acquiring these, and the incitements for employing them. The investigation of these would require a reconsideration of the subjects of many preceding divisions of this report to appreciate or even enumerate, more especially of these already discussed in the 12th chapter.

SECTION V.—OBSTACLES TO INCLOSURE.

In a former part of this report, Ch. vi. it has been already stated, that there is no want of power to inclose, and that the whole, or almost all the lands of the county, are already in absolute severalty.

Yet there are some obstacles to improvement, considerably connected with the subject of inclosure, which may be here noticed.

1. Streams are very frequently the boundaries between properties; and, as the law now stands, an opposite proprietor may obstinately refuse permission to his neighbour, to erect a dam across the mutual stream, although he may have no manner of use for it himself. Such streams may be much wanted, for the erection of water thrashing mills, of mills for grist or manufacture, or for irrigation.

Had these circumstances been in the contemplation of the Scots Legislature, at the time of enacting the general inclosure act, already mentioned in Ch. vi. it is hardly to be doubted that provision would have been made for facilitating such useful purposes. This having been omitted, it might perhaps be worthy of the wisdom of parliament to enact, that a proprietor on one side of a stream may appropriate an unoccupied fall, or place susceptible of serving for machinery or irrigation,

tion, on payment of a small acknowlegement or quit rent to the opposite neighbour, together with such damages as may be ascertained by a jury, or by arbitrament. It is believed that a similar law has long subsisted in Ireland, and has been found beneficial.

2. In Some rare instances, a proprietor or farmer, finds it difficult, or impossible, to drain his lands effectually, in consequence of the only fit descent, for a main drain, passing through the lands of another person, who may obstinately refuse his consent. Power might be granted to the Sheriff, who is the ordinary judge in every county in Scotland, to enforce such accommodation, at the sole expence of the party requiring, unless litigiously resisted by the other party; and to decree the payment of damages, if any, to be ascertained by a jury, or by arbitrators.

3. Certain passages, or way-leaves, through the property of a neighbour, may often be of infinite importance, without being attended with the slightest injury or inconvenience to the lands of the person from which they are taken or procured. The Sheriff might be empowered to grant such passages, at the expence of the party requiring, as in the former case, on payment of a fair equivalent at the determination of referees.

4. All proprietors likewise ought to be interdicted from shutting up access to customary drinking pools, at rivers, brooks, ponds, or springs; and even compellable to grant access to such as may be deemed necessary and proper by the Sheriff, on application of those who are interested, and on ample payment of all damages, to be ascertained as in the former cases.

In these enumerated circumstances, it ought to be left to the judgement and discretion of the Sheriff, on summary

summary petition; and after inspection, either to name one umpire, to cause the parties each to name an arbitrator, while the Sheriff names a third, or oversman, in case the two nominees should disagree; or to order a jury and proof on the spot, according to his estimation of the importance of the subject. Arbitrament, where the parties can so agree, is the best manner of settling all such matters; and the determination of arbitrators ought to be final.

It singularly happens, that the reporter was so situated as in some measure to have felt the necessity for legislative provisions of relief, in all these enumerated circumstances. He occupied a paper mill upon a stream that is often scanty in summer. In the immediate neighbourhood, another stream, altogether unoccupied, bounds between the lands he possessed, and the property of a rich neighbour. Though he offered any reasonable consideration, to be agreed between parties, or to be awarded by arbitration, he was absolutely refused permission to convey the water of that stream into his mill race, under the notion that it might injure a grist mill half a mile below where the two streams unite.

The same rich proprietor has a small pendicle of one of his numerous estates, entirely detached, by a public road and a rocky hill, from the whole estate to which it belongs, and which detached land does not exceed the tenth part of an acre of absolutely barren gravel, which was formerly a public road, now changed a few yards to one side by the erection of a bridge. This waste piece of ground has been open and unappropriated from the creation of the world, and will continue worthless to all eternity. Through it is the only

only practicable road by which the reporter could convey materials for repairing the dam, race, back-buildings, and machinery of his mill; and it had been used for that purpose for more than thirty years. Yet has this neighbour chosen to inclose that worthless spot, and so to shut out all access, and peremptorily refused to accommodate these indispensibly necessary purposes. By this inclosure, the reporter is likewise shut out from watering the horses and cattle of his farm, and is put to extreme trouble and inconvenience to procure water elsewhere. Such things ought to admit of legal remedy; for no person, in a well regulated country, ought to have power to use his property to the manifest injury of his neighbour; nor to be able to prevent his neighbour from availing himself of his situation, where no injury can accrue, and where indulgence of servitude or otherwise is offered to be amply compensated for.

It happens, likewise, that the reporter rents a piece of rich flat land, the surface water from which can only be carried off in two particular directions through the lands of his neighbours. Fortunately, in this instance, he finds no opposition in drawing the necessary discharging drains. It might, however, have been otherwise; and it would be hard to have had several acres of rich loam rendered comparatively useless, were they situated adjoining to a contentious neighbour.

SECTION

SECTION VI.—OBSTACLES FROM TITHES.

It has been already stated that tithes do not exist in the county, except to so trifling an extent that it can hardly be considered as an exception to the general rule; and that even these, and the general modus in lieu of tithes, have hardly any connection with agriculture, and consequently form no obstacle whatever to improvement in Scotland.

SECTION VII.—OBSTACLES FROM POORS RATES.

As poor rates, according to the English idea, do not exist in Berwickshire, and as the trifling assessment for the assistance of the real poor, does not amount to twopence in the pound rent upon the farmers, on the average of the county, these certainly cannot be considered as any obstacle to improvement.

SECTION VIII.—OBSTACLES FROM WANT OF DISSEMINATED KNOWLEDGE.

As the farmers in this county are men of sufficiently liberal education, and considerably conversant in every improvement that is carried on around them, and even in distant districts, there is certainly no want of disseminated knowledge among them, so far as agriculture in all its branches is concerned, as suitable for the soil, climate, markets, and other circumstances of the county.

There are no agricultural libraries; neither does the reporter know of any cheap publication circulated, or calculated for circulation, in the county. The farmers are men of moderate opulence, clear observation and experience, and of general knowledge, and many of them are intelligent readers of agricultural publications. They often travel to distant districts in their business, or for relaxation, and observe accurately and intelligently such improved practices as occur. In their meetings with each other at markets, and in social intercourse, every interesting topic is freely discussed and disseminated; and any proposal of circulating cheap publications, among such respectable and intelligent men, would rather be felt as degrading to their knowledge and situation.

SECTION

SECTION IX.—OBSTACLES RELATIVE TO POLICE.

CRIMES and vagrancy are not so numerous or flagrant as to call for any observations on the amelioration of the police, which is administrated with great attention and impartiality by the Sheriff and by the Justices at their petty and quarter sessions. They have lately appointed extraordinary constables in every parish, to assist in carrying their judicious and salutary regulations into effect. It might, perhaps, be an important improvement if small jails, or lock-up houses, were established in each of the districts for petty sessions, to which vagrant beggars, and disorderly blackguards, might be committed for correction, or until examined at next court. The original cost of these may appear burthensome upon the police fund, or rogue money, but would probably, in the end, have a tendency to diminish that tax, or at least to prevent its augmentation.

In the neighbourhood of small towns a frequent nuisance occurs, of people keeping horses, cows, or asses, who have no means whatever of supporting them. Under pretence of pasturing these by road sides, they are guilty of frequent trespasses upon the farmers fields, and often steal grass, corn, or hay. It might, perhaps, be right that every person who keeps cattle of any kind should be liable to shew when called on that they possess sufficient land or provender for their support.

In

In time of war, when troops are interchanging between England and Scotland, the parish of Ayton is charged with an extraordinary proportion of the burthen of billets and baggage, which might be shared by the neighbouring parishes of Eyemouth and Coldingham. The public allowance for carrying baggage is sufficiently ample, were it possible to check the avarice of the non-commissioned officers who have the charge, and who frequently load the carts with nearly double the regulated weight; besides that, the carts are generally swarming with the wives and children of the soldiers, to the great oppression and injury of the horses. In the service of their country, our farmers are too patriotic and loyal to convert mole-hills into mountains. It may, however, be respectfully offered to the higher powers, if possible, to consider seed time and harvest in the removal of troops from one quarter to another. The freest time for the farmers draught horses, and when, of course, they can be best spared for the conveyance of military baggage, is during July and August, after turnip seed, and before harvest.

SECTION X.—CONCLUDING OBSERVATIONS.

From what has been said in the course of this report, and in the foregoing sections of this chapter, it will appear that there are no material obstacles to improvement, except what necessarily arise from the nature and

circumstances of the county itself, and which its rapidly increasing opulence is actually removing, and will be able progressively to surmount. In the general tenor of the report, various circumstances have been adverted to, which are less or more in the nature of obstacles to improvement, and such measures have been mentioned as seemed best calculated to remove them. The principal of these, the extension of good roads, and the construction of bridges in convenient and necessary situations, are in progress.

SECTION XI.—ENEMIES.

The ravages of the wire-worm and slug have happily so little place in this county, as not to form any objects of attention, so that no information respecting them has reached the reporter that is worth communicating. On first breaking up old rich pastures for tillage, injury is sometimes sustained from grubs, but for which no means of prevention is known.

Rats and mice are sufficiently numerous, and produce considerable injury in rick yards and barns. In some parts of East Lothian, it is said that sea sand, strewed among the sheaves, while building the ricks, effectually prevents these vermin from taking up their abode among the grain; but having no experience in this county, on this subject, it is merely mentioned; cats and poison are the only means of preventing or mitigating

the evil, known, or in use. A mixture of finely pounded quicklime, with from a quarter to a half the quantity of oat-meal, and a little sugar, has been lately found a most effectual poison for rats. Placing the ricks on *staddles*, or frames, with feet which cannot be scaled, would be an excellent and effectual defence, and would probably be fully compensated for, with profit, in the course of a lease of 19 years.

From the county being upon the whole bare of wood, rooks and other birds are not so very numerous as to produce much evil. Sparrows are sufficiently abundant about all farm yards, and no means of prevention is resorted to but the gun occasionally. Though birds certainly commit depredations in seed time, and among grain when nearly ripe and afterwards, there are strong grounds to conclude that, upon the whole, they are of as much benefit to farmers, in other respects, as they are injurious in these. During a great part of the year, they derive their food from the seeds of weeds, from worms, grubs, slugs, and such other articles, as might accumulate without their aid, so as to produce much more injury. The following is said very effectually to destroy rooks. Make up a number of cones of white paper, similar to those used by grocers for small parcels of sugar or confectionary articles; smear a part of the inside of each with a little bird lime, and place them in a field frequented by rooks, with the smeared sides uppermost, a grain or two of wheat in the bottom, or small end of the cone, and the wide end open. In attempting to seize the bait the cone becomes fixed to the base of the upper mandible, and the rook, effectually blinded, is easily destroyed, or dies of hunger.

" Several

"Several years ago, a society was formed in the lower part of the county, for the purpose of destroying rooks. It is alledged that these birds feed more on turnips and young clover plants than formerly; but probably this is only more observable now on account of the increased cultivation of these plants. Though supposed by many that rooks answer some useful purposes, it is not universally agreed that they do good, and the havock they make among corn and potatoe fields, in seed time and harvest, and in turnip and clover fields during winter, is very obvious."—A. L.

The only other vermin that appear to produce injury are moles; and the same observations, respecting some probably useful tendency, is applicable to them as has been just mentioned respecting birds. It is believed that they are more unseemly than injurious. When they multiply exceedingly, their numbers may be thinned by mole catchers. Their unsightly hills, on pastures and grounds intended for hay, are yearly spread over the surface in spring, at a very small expence, and become a top dressing.

Foxes are not so numerous in this county as to prove of any very material injury; and have often been known to serve the farmer by herding his growing corns from the depredations of the poultry of his cottagers. A number of absolutely useless dogs, kept by cottagers and farmers servants, do infinitely more injury among young lambs than the foxes. Instead of exempting these noxious curs, every dog kept by a cottager ought to be heavily taxed, unless the owner produces a certificate from the farmer he serves, that the dog is necessary upon the farm.

CHAPTER XVIII.

MISCELLANEOUS ARTICLES.

SECTION I.—AGRICULTURAL SOCIETIES.

THERE are none such in the county; yet this certainly might become of material utility in disseminating the knowledge of improvement, and inciting competition to introduce new or improved practices. The ordinaries at weekly markets, where the farmers meet to dine, and their social meetings at each others houses, serve, in some measure, for discussing current topics on rural affairs and improvements, and where they mutually and freely interchange opinions and observations. The yearly ram-shews have an effect not inferior to the offering of premiums for improved stock, by the prices the rams produce, on these occasions, to the breeders, proportionate to the progressive improvement of

of the respective stock. On these occasions, too, the company almost always dine together, and eagerly discuss the various opinions relative to the points of perfection in sheep and cattle stock, and the best methods of improvement.

One book society, or subscription library, has been established at Dunse for a good many years, which, by moderate original contribution, and small annual payments, has accumulated a respectable and growing collection of books, of infinitely greater utility than the miserable trash which issues from circulating libraries. A similar establishment in Berwick would be highly useful, and seems only to require that a few leading individuals should make the proposal.

SECTION II.—PROVINCIAL TERMS.

THE language of Berwickshire is a provincial dialect of English with the Scots pronunciation, but greatly more intelligible to Englishmen even than many of the English provincial dialects. In the limits which remain in a work of this nature, it is quite impossible to give a general glossary of provincialisms; which, besides, is infinitely difficult for a native, or one who has resided long in the district, to collect, more especially such words as belong properly and exclusively to the county. The farmers are all men of competent education; and their

their language, though provincially pronounced, is relatively correct, and can be readily understood upon all subjects whatever, in any part of the kingdom, except occasionally when the particular provincial terms relative to farm labour, and particular ages of cattle and sheep, may occasion ambiguity, but which is soon and easily removed by explanation.

By much the larger portion of particular words and phrases, relative to the subject of agriculture, have already been incidentally noticed in the various divisions of this report, on the subjects to which thay refer, so that a glossary, or list and explanation of these, which only seem admissible in a work of this nature, would be a mere repetition, without any obvious use.

The most marked peculiarity in the dialect of Berwickshire is in the pronunciation of the *ch*, which is usually softened into *sh*, as a *shire* for a chair. Yet the sound of *sh* is sometimes hardened by the prefixion of a *t*, as *tshop* for shop, and *tchaise* for chaise. It singularly happens that the Northumberland bur, or *parler gras*, never in the least overleaps the boundary between Scotland and England, and consequently has not the smallest existence in Berwickshire. A few common terms of the ordinary provincial dialect may amuse. In male sheep, the ram is called *tup*; and tup lamb, weather lamb, weather hog, and dinmont, express the different ages. In female sheep the ewe lamb, ewe hog, gimmer, and ewe, express their different ages. Of black cattle, a young ox and heifer are usually named *steer* and *stirk*; the latter is often called a *quay* or *quey*. A young gelding is often called a *staig*, and a stallion is sometimes called a *cussor*, probably corrupted from courser, or war horse. Formerly, in speaking to their

their horses, carters employed *hap* and *wind* in ordering them to either side, now mostly *high-wo* and *jee*; and in calling to stop used the incommunicable sound of *prroo*, now *wo*, or *woy*. In calling a cow to be milked, *hove*, *hove*, often repeated, is the ordinary expression; anciently in the Lothians this was *prrutchy*, and *prrutchy lady*. A ridge or land, and the furrow, are called respectively *rig* and *fur*; and an oblique furrow for carrying off surface water is a *gaw-fur*. A horse collar is a *brecham*; a back band is a *rig-woody*; horse trees for ploughs and harrows, *swingle trees*. Oats are *aits*, or *yits*; barley usually *bear*; big is *rough-bear*; peas *piz*. A set of farm buildings is called a *stead*, or *steading*; the straw yard is the *courtin*; and sheds are named *hemmels*. The cow-house is called *byre*; and the farm house is often named the *ha*, or hall.

CONCLUSION.

HAVING already, in the immediately preceding chapter, adverted, as far as seemed necessary, to the means of improvement, and the measures calculated for that purpose, as connected with the obstacles to improvement, it is quite unnecessary to repeat the observations on this subject which have been already made.

In concluding his labour in the service of the Honourable Board of Agriculture and Internal Improvement, the reporter takes the liberty to offer his highest and

and most respectful tribute of approbation, of the valuable patriotic exertions in which it is engaged, and his warmest wishes that they may be attended by those advantages to the dearest interests of our country, which they so justly deserve.

It has been justly observed "That to that Board this country principally owes its rapid advancement in rural and agricultural affairs. It has introduced a spirit of enterprize and invention, and attached dignity and consequence to the study and practice of husbandry, which cannot be too highly estimated at the present important crisis, when our communication with the Continent of Europe is threatened to be obstructed, or entirely cut off, and when our internal resources alone can ensure our security and independence.*"

Should these pages be found to have contributed, in any tolerable degree, towards those most important purposes for which that Board was instituted, and the accomplishment of which it pursues with unremitting and enlightened attention, the reporter will feel most amply recompenced for the labour which this performance has occasioned; and shall be proud to think that he has not lived entirely in vain for his country.

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* Farmers Journal, No. 18. p. 138.

APPENDIX.

APPENDIX.

No. I.

Tables for converting Scots to English Measures.

Some explanation of these tables, already referred to, in chap. 16. sect. 5. and of their application to use, may be necessary.

By the first and second, besides giving an exact view of the relative proportions of the English and Scots acres, and facilitating the reduction of any measured extent of ground from one denomination to the other, these two tables will enable any person to compare the seed employed, or necessary, to sow an acre of either denomination, with what is requisite to sow an acre of the other denomination of the same thickness; and likewise to compare the produce of an acre of either denomination, with an exactly equivalent crop from an acre of the other denomination. Thus, 6 bushels of seed to an English acre, are the same as 7.6 bushels of seed to a Scots acre; or 6 bushels of seed to a Scots acre are equivalent to 4.7 bushels of seed to an Eng-

lish acre. Thus likewise, 100 bushels of produce upon a Scots acre are equivalent to 78.69 bushels from an English acre; and 100 bushels produced by an English acre are equal to 127 bushels from a Scots acre.

The uses of the other tables must be obvious upon inspection; and all that seems necessary to be observed respecting them is, that it has been judged better to construct them decimally, than to run the comparisons into all the minute subdivisions of the several units of denomination, as quarters, bushels, pecks, and gallons; or bolls, firlots, pecks, and lippies, or forpets.

Tables.

TABLES OF ENGLISH & SCOTS MEASURES.

TABLE I.

To reduce Scots to English Acres.

Scots Acres.		*English Acres.*
1		1.2708
2		2.5416
3		3.8124
4		5.0832
5		6.2840
6		7.6248
7		8.9956
8	*Equal to*	10.1664
9		11.4372
10		12.7080
20		25.4161
30		38.1242
40		50.8323
50		62.8404
100		127.0809
1000		1270.8095
10000		12708.0950

TABLE II.

To reduce English to Scots Acres.

English Acres.		*Scots Acres.*
1		.7869
2		1.5738
3		2.3607
4		3.1476
5		3.9345
6		4.7214
7		5.5083
8	*Equal to*	6.2952
9		7.0821
10		7.8690
20		15.7380
30		23.6070
40		31.4760
50		39.3455
100		78.6900
1000		786.9000
10000		7869.0000

Tables of English and Scots Measures.

TABLE III.

To reduce the Rent of the Scots Acre, to the correspondent value of an English Acre of equal land.

Scots Acre.				*English Acre.*		
£.	s.	d.		£.	s.	d.
0	0	6	*Rent of the Scots Acre is equivalent for the English Acre to*	0	0	4.7
0	1	0		0	0	9.4
0	2	6		0	1	11.6
0	5	0		0	3	11.2
0	7	6		0	5	10.8
0	10	0		0	7	10.4
0	10	6		0	8	3.1
0	15	0		0	11	9.6
1	0	0		0	15	8.8
1	1	0		0	16	6.2
1	10	0		1	3	7.2
1	11	6		1	4	9.4
2	0	0		1	11	5.7
5	0	0		3	18	8.2
5	5	0		4	2	7.5
6	0	0		4	14	5.1
7	0	0		5	10	2.0
8	0	0		6	5	10.8

TABLE IV.

To reduce the rent of an English Acre, to the correspondant value of a Scots Acre of the same or equal land.

English Acre.				*Scots Acre.*		
£.	s.	d.		£.	s.	d.
0	0	6	*Rent for the English Acre is equivalent for the Scots Acre to*	0	0	7.6
0	1	0		0	1	3.2
0	2	6		0	3	2.1
0	5	0		0	6	4.2
0	7	6		0	9	6.3
0	10	0		0	12	8.5
0	10	6		0	13	4.1
0	15	0		0	19	0.7
1	0	0		1	5	5.0
1	1	0		1	6	8.2
1	10	0		1	18	1.5
1	11	6		2	0	0.0
2	0	0		2	10	10.0
5	0	0		6	7	1.0
5	5	0		6	13	5.0
6	0	0		7	12	6.0
7	0	0		8	17	10.0
8	0	0		10	3	4.0

Tables of English and Scots Measures.

TABLE V.

To reduce Berwickshire Bolls to Winchester Quarters.

Berwickshire Bolls.		*Winchester Quar.*	*Bush.*
1	*Equal to*	0	6,2
2		1	4.4
3		2	2.7
4		3	1.0
5		3	7.1
6		4	5.4
7		5	3.6
8		6	1.8
9		7	0.1
10		7	6.3
20		15	4.6
50		38	7.6
100		77	7.2
1000		779	0.0

TABLE VI.

To reduce Winchester Quarters to Berwickshire Bolls.

Winchester Quarters.		*Berwickshire Bolls.*
1	*Equal to*	1.2
2		2.5
3		3.8
4		5.1
5		6.4
6		7.7
7		9.0
8		10.2
9		11.5
10		12.8
20		25.6
50		64.1
100		128.3
1000		1283.6

Tables of English and Scots Measures.

TABLE VII.

To reduce the prices of a Berwickshire boll of Grain to equivalent prices of the Winchester Quarter.

Berwickshire Boll.				*Winchester Quarter.*		
£.	s.	d.		£.	s.	d.
0	0	6		0	0	7.7
0	1	0		0	1	3.4
0	2	0		0	2	6.8
0	3	0		0	3	10.2
0	4	0		0	5	1.6
0	5	0		0	6	5.0
0	7	6		0	9	7.5
0	10	0		0	12	10.0
0	10	6		0	13	5.7
0	15	0		0	19	3.0
1	0	0	*Equal to*	1	5	8.0
1	1	0		1	6	11.5
1	5	0		1	12	1.1
1	10	0		1	18	6.1
1	11	6		2	0	5.2
2	0	0		2	11	4.1
2	10	0		3	4	2.2
2	12	6		3	7	4.7
3	0	0		3	17	0.2
4	0	0		5	2	8.3
5	0	0		6	8	4.4
5	5	0		6	14	9.4
5	15	6		7	7	7.5

TABLE VIII.

To reduce the prices of a Winchester Quarter to equivalent prices of the Berwickshire Boll.

Winchester Quarter.				*Berwickshire Boll.*		
£.	s.	d.		£.	s.	d.
0	0	6		0	0	4.6
0	1	0		0	0.	9.3
0	2	0		0	1	6.6
0	3	0		0	2	4.0
0	4	0		0	3	1.3
0	5	0		0	3	10.7
0	10	0		0	7	9.4
0	15	0		0	11	8.2
1	0	0		0	15	7.0
1	1	0		0	16	4.3
1	5	0	*Equal to*	0	19	5.7
1	10	0		1	3	4.4
2	0	0		1	11	2.0
2	10	0		1	18	11.4
3	0	0		2	6	8.8
4	0	0		3	2	5.0
5	0	0		3	18	0.0
5	5	0		4	1	10.6
5	10	0		4	5	9.3
6	0	0		4	13	5.8
6	6	0		4	18	3.0
6	10	0		5	1	4.3
6	16	6		5	6	5.1

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No. II.

Fiars of Berwickshire during 120 years; from 1689 to 1808, both inclusive; Reduced to Winchester Quarters and Sterling Money; except Oat-meal:

First series, from 1689 to 1722, both inclusive.

Crops.		Wheat.			Merse Bear.			Lammermoor do.			Merse Oats.			Lammermoor do.			Peas.			Oat-meal Old Boll.		
		£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
1689	Candlemas	1	0	0	0	10	2	0	9	4	0	10	0	0	9	4	0	14	0	0	9	8
	Lammas	1	2	2	0	15	6	0	14	9	0	13	4	0	12	2	1	1	0	0	12	0
	Average	1	1	1	0	12	10	0	12	1	0	11	8	0	10	9	0	17	6	0	10	10
1690	Candlemas	1	4	2	0	14	8	0	13	4	0	10	8	0	10	0	1	1	8	0	10	10
	Lammas	1	2	3	0	13	4	0	12	7	0	10	8	0	10	0	1	2	2	0	9	8
	Average	1	3	2	0	14	0	0	13	0	0	10	8	0	10	0	1	1	11	0	10	6
1691	Candlemas	0	18	4	0	8	1	0	8	0	0	6	0	0	5	9	0	13	4	0	6	8
	Lammas	1	0	0	0	8	10	0	8	1	0	6	8	0	6	0	0	13	4	0	6	8
	Average	0	19	2	0	8	6	0	8	0	0	6	4	0	5	11	0	13	4	0	6	8
1692	Candlemas	1	5	0	0	9	7	0	8	10	0	7	1	0	6	8	0	13	4	0	7	2
	Lammas	1	0	0	0	10	0	0	9	6	0	7	4	0	6	8	0	15	0	0	7	6
	Average	1	2	6	0	9	9	0	9	2	0	7	2	0	6	8	0	14	2	0	7	4
1693	Candlemas	1	6	8	0	11	1	0	10	8	0	8	0	0	7	4	0	13	4	0	8	0
	Lammas	1	13	4	0	12	2	0	11	9	0	10	8	0	10	0	0	16	8	0	10	0
	Average	1	10	0	0	11	8	0	11	3	0	9	4	0	8	8	0	15	0	0	0	8
1694	Candlemas	1	1	8	0	10	8	0	9	1	0	8	1	0	8	0	0	13	4	0	9	4
	Lammas	1	3	4	0	11	6	0	11	1	0	12	0	0	11	6	0	16	8	0	13	9
	Average	1	2	6	0	11	1	0	10	1	0	10	0	0	9	9	0	15	0	0	11	7

Fiars of Berwickshire continued. *First Series.*

Crops.		Wheat.	Merse Bear.	Lammermoor, do.	Merse Oats.	Lammermoor, do.	Peas.	Oat-meal, Old Boll.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1695	Candlemas	1 6 8	0 12 2	0 11 9	0 11 6	0 11 6	1 3 4	0 12 6
	Lammas	1 16 8	1 6 8	1 5 11	1 5 11	1 5 2	2 0 0	1 6 8
	Average	1 11 10	0 19 5	0 18 10	0 18 4	0 18 4	1 12 8	0 19 7
1696	Candlemas	1 12 0	1 1 9	0 16 8	0 14 9	0 11 1	1 5 0	0 16 8
	Lammas	1 10 0	1 1 5	0 14 5	0 15 6	0 8 10	1 11 8	0 17 4
	Average	1 11 0	1 1 7	0 15 7	0 15 2	0 9 11	1 8 4	0 17 0
1697	Candlemas	1 13 4	0 15 6	0 13 4	0 10 8	0 8 10	1 3 4	0 10 8
	Lammas	2 0 0	1 6 0	0 17 7	1 2 2	0 15 6	2 0 0	1 1 4
	Average	1 16 8	1 0 9	0 15 6	0 16 5	0 12 4	1 11 0	0 16 0
1698	Candlemas	1 16 8	1 2 2	0 15 6	0 17 7	0 11 1	1 15 0	1 0 0
	Lammas	2 6 8	1 11 1	1 3 4	1 3 4	0 17 7	2 6 8	1 5 0
	Average	2 1 8	1 6 8	0 19 5	1 0 6	0 14 4	2 0 10	1 2 6
1699	Candlemas	1 18 10	1 0 0	0 17 1	0 17 0	0 14 1	1 8 4	0 14 8
	Lammas	1 13 4	1 0 0	0 16 8	0 15 6	0 12 10	1 10 0	0 11 8
	Average	1 16 1	1 0 0	0 16 11	0 16 3	0 13 6	1 9 2	0 14 8
1700	Candlemas	1 3 4	0 14 5	0 11 2	0 8 10	0 6 8	0 13 4	0 7 0
	Lammas	0 18 4	0 10 0	0 8 10	0 8 0	0 7 1	0 12 8	0 8 6
	Average	1 0 10	0 12 2	0 10 0	0 8 5	0 6 10	0 13 0	0 7 9
Highest Price		2 6 8	1 11 1	1 5 11	1 5 11	1 5 2	2 6 8	1 6 8
Lowest Price		1 13 4	0 8 1	0 8 0	0 6 0	0 5 9	0 13 4	0 6 8
Average of 12 Years		1 6 3	0 15 8	0 13 4	0 12 6	0 10 7	1 2 8	0 12 9

Crops.		Wheat.	Merse Bear.	Lammermoor do.	Merse Oats.	Lammermoor do.	Peas.	Oat Meal, Old Boll.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1701	Candlemas	0 18 4	0 10 8	0 9 9	0 7 9	0 6 8	0 10 0	0 6 6
	Lammas	1 0 0	0 10 8	0 9 7	0 10 0	0 8 10	0 12 0	0 9 0
	Average	0 19 2	0 10 8	0 9 8	0 8 11	0 7 9	0 11 0	0 7 9
1702	Candlemas	0 16 8	0 9 4	0 8 2	0 7 7	0 6 8	0 12 0	0 8 0
	Lammas	0 18 4	0 10 0	0 8 10	0 10 0	0 8 10	0 15 0	0 9 10
	Average	0 17 6	0 9 8	0 8 6	0 8 9	0 7 9	0 13 6	0 8 11
1703	Candlemas	1 3 4	0 11 2	0 10 8	0 8 0	0 7 1	0 12 8	0 8 2
	Lammas	1 6 8	0 15 6	0 14 1	0 12 7	0 11 1	1 0 0	0 12 0
	Average	1 5 0	0 13 4	0 12 4	0 10 3	0 9 1	0 16 8	0 10 1
1704	Candlemas	0 19 4	0 10 8	0 9 9	0 7 5	0 6 8	0 12 0	0 7 2
	Lammas	1 0 0	0 11 1	0 10 0	0 8 1	0 7 4	0 16 8	0 8 8
	Average	0 19 8	0 10 11	0 9 10	0 7 9	0 7 0	0 14 4	0 7 11
1705	Candlemas	0 18 2	0 11 9	0 10 8	0 8 2	0 7 5	0 14 8	0 6 8
	Lammas	0 15 8	0 10 0	0 8 10	0 7 5	0 6 3	0 13 4	0 7 6
	Average	0 16 11	0 10 10	0 9 9	0 7 9	0 6 10	0 14 0	0 7 1
1706	Candlemas	0 13 4	0 7 4	0 6 0	0 4 5	0 3 6	0 6 4	0 4 2
	Lammas	0 16 8	0 7 4	0 6 2	0 5 4	0 4 8	0 8 0	0 5 0
	Average	0 15 0	0 7 4	0 6 1	0 4 10	0 4 1	0 7 2	0 4 7

Fiars of Berwickshire continued. *First Series.*

Crops.		Wheat.			Merse Bear.			Lammermoor do.			Merse Oats.			Lammermoor do.			Peas.			Oat-meal, Old Boll.		
		£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
1707	Candlemas	0	19	4	0	8	4	0	7	7	0	6	5	0	5	9	0	8	4	0	7	0
	Lammas	0	19	4	0	8	9	0	8	4	0	7	7	0	6	10	0	10	0	0	6	0
	Average	0	19	4	0	8	7	0	7	11	0	7	0	0	6	3	0	9	2	0	6	6
1708	Candlemas	1	5	6	0	12	1	0	11	3	0	9	7	0	8	9	0	16	8	0	10	0
	Lammas	1	16	8	1	0	0	0	17	7	0	16	5	0	14	11	1	10	0	0	17	6
	Average	1	11	1	0	16	0	0	14	5	0	13	6	0	11	10	1	3	4	0	13	9
1709	Candlemas	1	15	0	0	15	6	0	13	4	0	12	5	0	10	8	1	1	8	0	12	8
	Lammas	1	11	8	0	16	8	0	14	11	0	12	5	0	11	1	1	3	4	0	12	0
	Average	1	13	4	0	16	1	0	14	2	0	12	5	0	10	11	1	2	6	0	12	4
1710	Candlemas	1	1	8	0	13	4	0	11	9	0	10	8	0	9	4	0	19	0	0	9	0
	Lammas	1	6	8	0	12	10	0	11	6	0	10	8	0	9	4	1	0	0	0	9	0
	Average	1	4	2	0	13	1	0	11	7	0	10	8	0	9	4	0	19	6	0	9	0
1711	Candlemas	1	5	8	0	12	0	0	11	6	0	9	4	0	8	9	0	13	4	0	8	4
	Lammas	1	3	4	0	10	5	0	7	2	0	9	4	0	8	9	0	12	8	0	9	2
	Average	1	4	6	0	11	2	0	9	4	0	9	4	0	8	9	0	13	0	0	8	9
Highest Price		1	16	8	1	0	0	0	17	7	0	16	5	0	14	11	1	10	0	0	17	6
Lowest Price		0	13	4	0	7	4	0	6	0	0	4	5	0	3	6	0	6	4	0	4	2
Average of 11 Years		1	2	4	0	11	7	0	10	4	0	9	2	0	8	2	0	15	10	0	9	1

Crops.		Wheat.			Merse Bear.			Lammermoor do.			Merse Oats.			Lammermoor do.			Peas.			Oat-meal, Old Boll.		
		£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
1712	Candlemas	1	1	8	0	8	10	0	8	0	0	7	1	0	6	0	0	10	0	0	7	0
	Lammas	1	3	4	0	10	0	0	8	10	0	8	1	0	7	9	0	14	0	0	7	6
	Average	1	2	6	0	9	5	0	8	5	0	7	7	0	6	11	0	12	0	0	7	3
1713	Candlemas	1	11	8	0	12	1	0	11	1	0	8	0	0	6	8	1	5	0	0	7	8
	Lammas	1	3	4	0	12	10	0	12	0	0	10	0	0	8	9	1	0	8	0	8	4
	Average	1	7	6	0	12	5	0	11	7	0	9	0	0	7	8	1	2	10	0	8	0
1714	Candlemas	1	3	4	0	13	4	0	12	0	0	9	4	0	8	0	1	1	8	0	9	0
	Lammas	1	0	0	0	12	1	0	11	1	0	9	7	0	8	10	1	0	0	0	8	4
	Average	1	1	8	0	12	8	0	11	7	0	9	5	0	8	5	1	0	10	0	8	8
1715	Candlemas	1	0	0	0	10	2	0	9	1	0	8	2	0	6	10	0	10	8	0	7	8
	Lammas	1	2	0	0	9	9	0	8	10	0	7	7	0	6	8	0	14	4	0	7	2
	Average	1	1	0	0	10	0	0	9	0	0	7	10	0	6	9	0	15	6	0	7	5
1716	Candlemas	1	0	0	0	9	4	0	8	9	0	7	9	0	7	1	0	11	0	0	7	6
	Lammas	1	1	8	0	9	9	0	8	9	0	9	4	0	8	9	0	12	8	0	8	0
	Average	1	0	10	0	9	6	0	8	9	0	8	7	0	7	11	0	11	10	0	7	9
1717	Candlemas	1	1	8	0	10	2	0	8	10	0	8	1	0	7	7	0	12	0	0	8	4
	Lammas	1	1	1	0	10	8	0	7	2	0	9	1	0	8	1	0	14	8	0	8	4
	Average	6	1	4	0	10	5	0	8	0	0	8	7	0	7	10	0	13	4	0	8	4

Crops.		Wheat.	Merse Bear.	Lammermoor do.	Merse Oats.	Lammermoor do.	Peas.	Oat-meal, Old Boll.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1718	Candlemas	0 17 8	0 11 1	0 10 5	0 8 10	0 8 4	0 11 8	0 8 4
	Lammas	1 0 8	0 12 0	0 10 8	0 10 8	0 8 10	0 13 4	0 9 0
	Average	0 19 2	0 11 6	0 10 7	0 9 6	0 8 7	0 12 6	0 8 8
1719	Candlemas	1 0 0	0 13 4	0 12 5	0 12 0	0 11 6	0 19 4	0 9 0
	Lammas	1 0 0	0 13 4	0 12 1	0 10 8	0 10 0	0 16 8	0 9 0
	Average	1 0 0	0 13 4	0 12 3	0 11 4	0 10 9	0 18 0	0 9 0
1720	Candlemas	0 16 8	0 12 1	0 11 1	0 8 1	0 8 0	0 13 4	0 7 4
	Lammas	0 19 0	0 12 0	0 11 1	0 9 1	0 8 1	0 16 8	0 8 4
	Average	0 17 10	0 12 0	0 11 1	0 8 7	0 8 0	0 15 0	0 7 10
1721	Candlemas	1 0 0	0 9 9	0 9 3	0 8 0	0 7 5	0 16 8	0 10 0
	Lammas	1 5 8	0 11 9	0 10 8	0 12 0	0 11 6	0 19 8	0 11 3
	Average	1 2 10	0 10 9	0 9 11	0 10 0	0 9 5	0 18 2	0 10 8
1722	Candlemas	1 3 4	0 12 1	0 11 1	0 10 0	0 9 4	1 0 0	0 9 0
	Lammas	1 5 0	0 13 4	0 12 0	0 11 6	0 10 8	1 0 0	0 10 6
	Average	1 4 2	0 12 8	0 11 6	0 10 9	0 10 0	1 0 0	0 9 9
Highest Price		1 11 8	0 13 4	0 12 5	0 12 0	0 11 6	1 5 0	0 11 3
Lowest Price		0 16 8	0 9 5	0 7 2	0 7 1	0 6 0	0 10 0	0 7 0
Average of 11 Years		1 1 9	0 11 9	0 10 3	0 9 2	0 8 5	0 16 11	0 8 6

Fiars

Comparative results of the First Series.

Circumstances.	Wheat.	Merse Bear.	Lammermoor ditto.	Merse Oats.	Lammermoor ditto.	Peas.	Oat-meal, Old Boll.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Highest Price	2 6 8	1 11 1	1 5 11	1 5 11	1 5 2	2 6 8	1 6 8
Lowest Price	0 13 4	0 7 4	0 6 0	0 4 5	0 3 6	0 6 4	0 4 2
General Average	1 3 5	0 13 0	0 11 4	0 10 3	0 9 1	0 18 6	0 10 1
Highest Candlemas	1 15 0	1 2 2	0 17 1	0 17 7	0 14 1	1 15 0	1 0 0
Highest Lammas	2 6 8	1 11 1	1 5 11	1 5 11	1 5 2	2 6 8	1 6 8
Lowest Candlemas	0 13 4	0 7 4	0 6 0	0 4 5	0 3 6	0 6 4	0 4 2
Lowest Lammas	0 15 8	0 7 4	0 6 2	0 5 4	0 4 8	0 8 0	0 5 0
Average Candlemas	1 4 2	0 14 9	0 11 6	0 11 0	0 9 8	1 0 7	0 12 1
Average Lammas	1 6 2	0 19 2	0 16 0	0 15 7	0 14 11	1 7 7	0 15 10

Berwickshire

Berwickshire Fiars continued.—Second Series; from 1723 to 1808, both inclusive.

Crops, all taken at Candlemas only.	Wheat.	Merse Bear.	Lammermoor ditto.	Merse Oats.	Lammermoor ditto.	Peas.	Oat-meal 140 libs.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1723	1 2 6	0 13 9	0 12 0	0 12 0	0 10 8	0 18 4	0 9 2
1724	1 6 8	0 14 0	0 11 1	0 9 4	0 8 10	0 16 8	0 8 0
1725	1 7 8	0 12 0	0 12 10	0 10 2	0 9 6	1 5 0	0 8 8
1726	1 6 0	0 14 5	9 11 1	0 8 10	0 8 5	0 14 0	0 7 8
1727	1 7 8	0 16 8	0 13 4	0 9 4	0 8 10	1 0 8	0 8 6
1728	1 8 0	0 12 0	0 15 4	0 12 0	0 11 2	0 18 8	0 9 8
1729	1 4 0	0 19 5	0 11 1	0 10 0	0 8 10	0 13 4	0 9 4
1730	1 0 0	0 0 6	0 9 4	0 8 2	0 7 11	0 11 0	0 6 8
Average of 8 Years.	1 5 11	0 13 1	0 12 0	0 10 0	0 9 3	0 12 2	0 8 5
1731	0 17 8	0 10 0	0 8 10	0 8 10	0 8 0	0 11 8	0 7 0
1732	0 16 8	0 8 2	0 7 1	0 7 1	0 6 0	0 12 0	0 5 10
1733	1 4 0	0 11 1	0 10 0	0 8 10	0 8 5	0 13 4	0 8 0
1734	1 6 8	0 10 8	0 9 9	0 8 5	0 7 9	0 13 4	0 8 0
1735	1 5 0	0 11 4	0 10 0	0 10 8	0 10 2	0 16 0	0 8 8
1736	1 5 0	0 15 3	0 13 0	0 11 4	0 10 5	1 1 0	0 8 6
1737	1 6 0	0 14 5	0 12 8	0 10 2	0 9 4	1 3 4	0 8 8
1738	1 1 4	0 10 8	0 9 4	0 7 4	0 6 8	0 11 0	0 6 8
1739	1 2 8	0 11 4	0 9 4	0 9 4	0 8 0	0 12 8	0 9 4
1740	1 18 0	0 19 4	0 17 4	0 16 8	0 14 5	1 16 8	0 15 2
Average of 10 Years.	1 4 5	0 12 3	0 10 9	0 9 10	0 8 11	0 17 1	0 8 7

Berwickshire Fiars continued.—2d Series.

Crops.	Wheat.	Merse Barley.	Merse Bear.	Lammermoor ditto.	Merse Oats.	Lammermoor ditto.	Peas.	Oatmeal.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1741	1 4 0	none	0 12 10	0 11 6	0 9 6	0 8 10	0 16 0	0 8 4
1742	1 0 0	——	0 13 4	0 11 4	0 8 10	0 12 8	0 15 0	0 7 0
1743	0 16 0	——	0 8 8	0 7 4	0 6 8	0 5 9	0 9 0	0 5 6
1744	0 17 4	——	0 10 0	0 7 4	0 9 4	0 6 8	0 11 0	0 9 4
1745	1 10 0	——	0 12 8	0 11 4	0 13 4	0 12 8	1 2 0	0 10 8
1746	1 4 0	——	0 11 7	0 10 0	0 9 8	0 8 5	0 12 0	0 8 4
1747	1 4 0	——	0 11 9	0 11 1	0 7 9	0 7 5	0 13 0	0 6 8
1748	1 7 8	——	0 12 10	0 11 6	0 10 5	0 10 0	0 12 8	0 8 4
1749	1 4 0	——	0 10 8	0 9 9	0 10 2	0 9 9	0 11 6	0 8 0
1750	1 4 0	——	0 10 2	0 9 4	0 9 9	0 9 6	0 13 6	0 8 4
Average of 10 Years	1 3 1	——	0 11 5	0 10 0	0 9 6	0 9 3	0 13 6	0 8 0
1751	1 10 0	none	0 14 0	0 12 8	0 14 0	0 12 8	1 0 0	0 11 8
1752	1 6 8	——	0 14 2	0 9 8	0 13 4	0 12 8	1 6 8	0 11 6
1753	1 5 4	0 15 6	0 14 0	0 12 8	0 12 10	0 12 0	0 17 4	0 10 0
1754	1 2 0	0 10 8	0 9 9	0 8 10	0 9 9	0 8 10	0 12 8	0 8 0
1755	1 4 0	0 12 3	0 11 1	0 10 0	0 12 8	0 11 1	0 12 8	0 10 0
1756	1 15 8	1 1 0	0 19 9	0 17 7	0 16 0	0 14 0	1 15 8	0 14 0
1757	1 12 0	0 16 8	0 15 4	0 13 4	0 15 3	0 13 11	1 1 4	0 12 0
1758	1 4 0	0 10 1	0 9 0	0 8 10	0 8 10	0 8 5	0 16 0	0 7 4
1759	1 3 4	0 10 8	0 10 0	0 9 0	0 8 0	0 7 4	0 16 0	0 6 8
1760	1 6 8	0 10 8	0 9 4	0 8 8	0 9 4	0 8 8	0 15 0	0 7 10
Average of 10 Years	1 6 9	0 13 5	0 12 8	0 11 1	0 12 0	0 11 0	0 19 4	0 9 11

Berwickshire Fiars continued.—2d Series.

Crops.	Wheat.	Merse Barley.	Merse Bear.	Lammermoor ditto.	Merse Oats.	Lammermoor ditto.	Peas.	Oatmeal.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1761	1 2 0	0 9 9	0 8 10	0 8 4	0 8 5	0 7 4	0 11 0	0 8 0
1762	1 10 0	0 17 4	0 16 0	0 14 8	0 17 7	0 16 0	0 19 4	0 14 8
1763	1 8 4	0 14 5	0 13 1	0 12 3	0 10 2	0 9 4	0 19 0	0 9 8
1764	1 10 8	0 14 3	0 12 3	0 11 9	0 11 9	0 10 8	1 3 0	0 10 4
1765	1 13 4	0 15 6	0 14 11	0 14 0	0 15 4	0 14 0	1 0 6	0 13 4
1766	1 16 0	1 0 4	0 19 0	0 17 7	0 16 8	0 14 5	1 5 0	0 17 4
1767	1 13 2	0 15 8	0 15 0	0 14 7	0 14 0	0 12 8	1 4 8	0 16 3
1768	1 10 0	0 11 4	0 10 0	0 10 0	0 10 5	0 9 4	1 6 0	0 9 6
1769	1 9 4	0 14 2	0 12 8	0 11 2	0 12 4	0 10 8	0 18 0	0 13 7
1770	1 8 8	0 15 4	0 14 5	0 13 6	0 13 7	0 12 0	1 1 4	0 11 6
Average of 10 Years.	1 10 1	0 14 10	0 13 7	0 12 9	0 12 10	0 11 9	1 0 9	0 12 5
1771	1 17 4	0 17 7	0 15 6	0 14 5	0 16 0	0 13 4	0 18 8	0 13 0
1772	1 17 8	1 0 0	0 18 8	0 17 9	0 15 8	0 13 4	1 4 8	0 13 4
1773	2 1 4	0 17 9	0 16 5	0 16 0	0 15 0	0 13 4	1 0 0	0 12 6
1774	1 14 8	0 18 6	0 16 0	0 15 6	0 14 4	0 14 2	0 19 4	0 12 4
1775	1 9 4	0 15 4	0 14 0	0 13 4	0 10 8	0 10 2	0 16 0	0 10 0
1776	1 10 1	0 11 1	0 10 9	0 9 4	0 10 3	0 8 1	0 15 1	0 8 7
1777	1 17 4	0 15 4	0 14 0	0 13 4	0 12 4	0 11 4	0 18 4	0 10 0
1778	1 10 0	0 14 8	0 14 0	0 13 4	0 12 8	0 11 1	0 15 0	0 10 0
1779	1 5 0	0 11 0	0 10 3	0 9 6	0 9 8	0 9 4	0 13 4	0 7 9
1780	1 16 0	0 14 3	0 12 8	0 12 8	0 13 8	0 12 10	0 16 8	0 10 9
Average of 10 Years.	1 13 10	0 15 6	0 14 3	0 13 6	0 13 0	0 11 8	0 17 8	0 10 10

Berwickshire Fiars continued.—2d Series.

Crops.	Wheat.	Merse Barley.	Merse Bear.	Lammermoor do.	Merse Oats.	Lammermoor do.	Peas.	Oatmeal.
	L. s. d.	L. s. d.	L. s. d.	L. s. d.	L. s. d.	L. s. d.	L. s. d.	L. s. d.
1781	1 12 8	0 13 4	0 12 8	0 11 4	0 11 0	0 10 4	0 17 0	0 9 9
1782	2 2 8	1 6 8	1 4 0	1 2 3	1 0 0	0 16 6	1 18 0	0 19 0
1783	1 16 8	1 1 0	0 19 4	0 18 8	0 16 4	0 15 6	1 2 8	0 14 0
1784	1 18 0	1 0 0	0 19 5	0 18 8	0 16 8	0 15 6	1 8 0	0 13 0
1785	1 15 4	0 18 9	0 16 0	0 14 8	0 14 0	0 12 0	1 1 4	0 12 0
1786	1 14 0	0 17 9	0 17 1	0 16 4	0 14 8	0 13 4	1 6 8	0 13 0
1787	1 16 0	0 18 8	0 16 0	0 16 8	0 14 8	0 12 0	1 6 8	0 12 0
1788	1 18 0	0 15 6	0 14 2	0 13 4	0 11 1	0 9 9	0 17 4	0 9 6
1789	2 2 8	1 0 0	0 18 8	0 16 8	0 14 0	0 11 1	1 4 0	0 12 0
1790	2 1 4	0 19 4	0 17 4	0 16 0	0 16 0	0 14 8	1 6 8	0 13 0
Average of 10 Years	1 17 8	0 18 0	0 17 5	0 16 5	0 14 10	0 13 0	1 4 10	0 12 8
1791	1 17 4	1 2 3	0 18 8	1 0 0	0 16 0	0 13 8	1 2 8	0 12 6
1792	1 18 0	1 4 5	1 2 0	1 2 8	0 16 8	0 14 8	1 5 4	0 14 0
1793	2 2 0	1 2 8	1 1 4	1 1 4	0 19 8	0 17 4	1 8 0	0 15 6
1794	2 5 4	1 6 0	1 3 4	1 4 5	0 18 0	0 16 8	1 19 0	0 14 6
1795	4 6 8	1 11 4	1 9 4	1 9 4	1 5 4	1 3 4	2 18 0	1 0 0
1796	2 2 8	1 8 0	1 5 4	1 6 8	0 17 4	0 16 8	1 4 0	0 14 0
1797	1 18 0	0 18 8	0 16 8	0 17 4	0 14 0	0 12 8	0 18 8	0 12 0
1798	2 1 4	1 1 4	0 18 8	1 0 0	0 18 4	0 17 0	1 4 8	0 14 0
1799	3 14 8	2 2 8	1 13 4	1 14 8	1 18 8	1 13 4	3 6 8	1 16 0
1800	5 16 0	3 0 0	2 13 4	2 10 8	2 6 0	2 0 0	4 6 8	2 0 0
Average of 10 Years	2 16 2	1 9 8	1 6 2	1 6 10	1 3 0	1 0 6	1 19 3	0 19 3

Berwickshire Fiars continued.—2d Series.

Crops.	Wheat.			Merse Barley.			Merse Bear.			Lammermoor ditto.			Merse Oats.			Lammermoor ditto.			Peas.			Oat-meal.		
	L.	s	d.	L.	s.	d.	L.	s.	d.	L.	s.	d.	L.	s.	d.	L.	s.	d.	L.	s.	d.	L.	s.	d.
1801	3	1	4	2	2	8	1	11	8	1	10	8	1	0	8	1	0	0	1	12	4	0	16	9
1802	2	9	4	1	2	0	0	17	4	1	0	0	0	19	4	0	18	0	2	0	0	0	15	0
1803	3	8	0	1	1	4	1	0	0	1	0	0	1	1	4	1	0	0	2	0	0	0	16	6
1804	4	0	0	2	0	0	1	14	8	1	17	4	1	4	0	1	2	4	1	14	8	0	18	6
1805	3	0	0	1	10	8		none.		1	10	8	1	6	0	1	4	0	1	12	0	0	19	6
1806	3	13	4	1	14	8	1	12	0	1	13	4	1	9	4	1	5	4	1	18	0	1	2	6
1807	2	15	0	2	2	8	1	17	4	2	0	8	1	12	8	1	10	8	3	2	0	1	5	6
1808	3	1	4	2	2	8	1	17	4	1	16	0	1	12	0	1	10	8	3	1	4	1	5	0
Average of 8 Years	3	4	0	1	19	7	1	10	0	1	11	1	1	5	8	1	3	10	2	2	4	0	19	8

Recapitulation of the average prices of Grain in the County of Berwick, for 120 *years, from* 1689 *to* 1808, *both inclusive, divided into periods, as in the foregoing Tables.*

Periods.		Wheat.			Merse Barley.			Merse Bear.			Lammermoor ditto.			Merse Oats.			Lammermoor ditto.			Peas.			Oat-meal.		
		L.	s.	d	L.	s.	d.	L.	s.	d.	L.	s.	d.	L.	s.	d.	L.	s.	d.	L.	s.	d.	L.	s	d.
1st 12 years	1689—1700	1	7	2	none			0	14	2	0	12	1	0	10	10	0	9	2	0	18	11	0	11	2
2d 11 ——	1701—1711	1	1	1	——			0	11	0	0	10	0	0	8	4	0	7	5	0	13	4	0	7	10
3d 11 ——	1712—1722	1	1	6	——			0	11	1	0	10	2	0	8	11	0	7	11	0	15	7	0	8	3
4th 8 ——	1723—1730	1	5	1	——			0	13	1	0	12	0	0	10	0	0	9	3	0	12	2	0	8	5
5th 10 ——	1731—1740	1	4	5	——			0	12	3	0	10	9	0	9	10	0	8	11	0	17	1	0	8	7
6th 10 ——	1741—1750	1	3	1	——			0	11	5	0	10	0	0	9	6	0	9	3	0	13	6	0	8	0
7th 10 ——	1751—1760	1	6	9	0	13	5	0	12	8	0	11	1	0	12	0	0	11	0	0	19	4	0	9	11
8th 10 ——	1761—1770	1	10	1	0	14	10	0	13	7	0	12	9	0	12	10	0	11	9	1	0	9	0	12	5
9th 10 ——	1771—1780	1	13	10	0	15	6	0	14	3	0	13	6	0	12	8	0	11	5	0	17	8	0	10	10
10th 10 ——	1781—1790	1	17	8	0	18	0	0	17	5	0	16	5	0	14	10	0	13	0	1	4	10	0	12	8
11th 10 ——	1791—1800	2	16	2	1	9	8	1	6	2	1	6	10	1	3	0	1	0	6	1	19	3	0	19	3
12th 8 ——	1801—1808	3	4	0	1	19	7	1	10	0	1	11	1	1	5	8	1	3	10	2	2	4	0	19	8
Averages. Of the whole 120 Years.	Highest,	3	4	0	1	19	7	1	10	0	1	11	1	1	5	8	1	3	10	2	2	4	0	19	8
	Lowest,	1	1	1	0	13	5	0	11	0	0	10	0	0	8	4	0	7	5	0	13	4	0	7	10
	Average,	2	2	6	1	6	6	1	0	6	1	0	6	0	17	0	0	15	7	1	7	10	0	13	9

OBSERVATIONS ON THE TABLE OF BERWICKSHIRE FIARS.

It is to be noticed, that the Berwickshire Fiars are taken yearly, for barley, bear, and oats, by the customary Berwickshire boll of six Winchester bushels, nearly; and for wheat and peas by the customary Lothian boll of four Winchester bushels, nearly; and that the fiars, or average prices, of these, are recorded in the old Scots money of account, in which 20d. Sterling is equal to L.1 Scots. In constructing the table of fiars for a period of 120 years, these customary measures have been reduced to the Winchester quarter of eight bushels, and the fiars prices are all stated in Sterling money. In this reduction of bolls to quarters, they have only been converted upon the more simple and popular supposition that the customary Berwickshire boll is equal to six bushels, and the Lothian boll to four, by which looser calculation, as already noticed in chap. 16. sect. 13. the comparison of years is equally accurate in every respect, as if the more rigorous mode of reduction, contained in the tables of Appendix No. 1. had been employed.

Oat meal remains, in the table of fiars, at the customary, or rather the legal standard boll of eight Dutch stones of seventeen and a half English pounds, or 140 pounds avoirdupois; and the only reduction used in the tables has been from Scots to Sterling money. Previously to the 1723, the oat meal fiars were fixed relatively to an old customary measured

measured boll, now fallen into disuse, but which seems to have been rather larger than the modern weighed boll.

From the commencement of the fiars, which the reporter has been enabled to procure, in 1689 down to 1722, both inclusive, the fiars of each crop used to be fixed at two distinct periods. At the term of Candlemas, in the month of February next subsequent to the harvest, a proof was taken of the average prices of all grain and oat meal sold out of the preceding crop, betwixt the term of Martinmas, in the November after the harvest of that crop, and the term of Candlemas, the day on which they were fixed, a period of about three months; and these formed the Candlemas fiars, according to which all stipends exigible in grain were paid.

2. At the subsequent term of Lammas, in August, a second average set of prices were fixed, in the same manner, of all grain and oat meal, of that crop, sold between the preceding Candlemas, in the month of February, and the term of Lammas, on which day these were fixed, a period of six months, which were called the Lammas fiars, and served as a rule for other payments exigible in grain and meal. Since 1722 these Lammas fiars have been discontinued; and accordingly it has been deemed proper to separate the table of fiars into two distinct series.

So long as the fiars continued to be fixed at these two periods, the Candlemas and Lammas fiars, taken conjunctly, may be considered as a very fair average view of the whole prices of each year or crop. This, unfortunately, cannot be said of the second series of Berwickshire fiars, in which the prices only between Martinmas and Candlemas, succeeding each harvest, have been taken, as they only contain the average prices of less than three months sales from each crop. To place that in a clear light, some general results of the first series of thirty-four years, containing both the Candlemas and Lammas fiars, have been given in the tables, which may be useful in forming com-

parisons, respecting the values of money, and other circumstances. From these results it appears that the Lammas fiars were uniformly, and very materially, higher than those taken at Lammas, by about 10 per cent. And as the just average prices, of the whole years, can only be derived from both taken conjunctly, it may be perfectly fair, in estimating average prices during the second period, when no Lammas fiars were fixed, to add seven and a half per cent. to the average prices produced from the Candlemas fiars. It would require extreme caution, however, to apply this rule to particular years, as it will be obvious, from inspection of the first series, that the Lammas fiars always fell below those of the Candlemas term, when a plentiful crop succeeded to a bad one; and, on the contrary, that the Lammas fiars rose exceedingly above the Candlemas fiars, when bad spring and summer weather gave every prospect of a scanty succeeding crop.

It may be proper to observe that, in the calculations of the tables of fiars, fractions have been avoided, because needlessly precise. And it may be farther noticed that, till about 20 years ago, one boll was always delivered along with each 20 sold, and was not paid for. This was called the *clad score*, or boll in score, and was very difficultly abolished by a combination among the sellers, or farmers. It is believed, however, that this was allowed for in fixing the average prices for the fiars.

Some irregularity may be noticed, in regard to the periods of years, into which the two series of these fiars have been distributed, instead of keeping them all to regular periods of ten years each; and it may be proper to explain the reason of the distribution which has been used.

In the first period of the first series, 12 years were chosen, on purpose to close the 17th century. The two next periods of 11 years each, equally exhaust that portion of the 18th century, during which the fiars continued to be fixed both

both at Candlemas and Lammas. Eight years were appropriated to the fourth period of the whole, or the first of the second series, in which only Candlemas fiars have been fixed, on purpose to divide the remainder of the 18th century into regular periods of ten years each.

In the recapitulation of the average prices for the whole 120 years, divided into twelve periods, the Candlemas prices only of the three first periods are exhibited, because the Lammas fiars were discontinued subsequent to 1722, for reasons which the reporter has not been able to learn.

APPENDIX NO. III.

Queries on Mildew, and Answers by the Reporter.

THE following Queries on Mildew having been transmitted, soon after harvest 1808, by the President of the Board of Agriculture, to the reporter, are here inserted, together with the answers he was enabled to give, as intimately connected with the subject of this work.

Queries respecting Mildew, and other diseases in grain, by Sir John Sinclair, Bart. answered by the Reporter.

Query 1.—'What do you apprehend occasioned the blight or mildew in your crops of wheat?'

Answer.—From the best information I can procure, the mildew began to make its appearance on the straw and ears of the growing wheats, immediately subsequent to a heavy fog or mist, rising, as it were, out of the ground, about the 4th to the 10th of July, and which was followed, for several weeks, by much misty and rainy weather, attended by considerable heat and little wind. The peculiar fog, above alluded to, is called in some parts of Scotland *the ground rook*, and strongly resembles a thick smoke arising from the surface of the earth. The disease upon the wheat straw, here named mildew, and which has done so much injury this season in Berwickshire, Teviotdale, and the northern part of Northumberland, consists of a species of lichen, of an oblong pointed form, like a boat, wherry or canoe, having narrow white edges, and a black pulverulant disk, each individual

individual spot or plant, being about an eighth of an inch long, and about a sixteenth in breadth. Not having Sir Joseph Bankses pamphlet on this subject, I can only say, from memory, that it exactly resembles his figures and description. That species of lichen which, when growing abundantly upon the straw of wheat, constitutes the disease of mildew, must necessarily be produced from its own peculiar seed; which seed, consequently, must be the immediate cause or origin of the plants and the disease. But how this lichen should so abound in some years, and not in others, and wherefore the particular weather, which has been described as immediately preceding the appearance of the mildew, should so singularly occasion and encourage its growth, are perhaps among the mysteries of nature that are beyond the powers of man to investigate.

Query 2.—'When did it first make its appearance, and what was its progress?'

Answer.—Its first appearance is already stated, in answer to the first query, to have been soon after the 4th of July, probably at different places between that day and the 10th or 14th, but did not produce much alarm till about the beginning of August, when the ears were discovered to have a great number of false grains.

Its progress consisted in the gradual increase and multiplication of the parasitical lichens upon the straw, and on the husks or chaff of the ears; until, in many instances, whole fields put on an universal blackened appearance, and the grains in the ear were found to be less or more false, or deaf, or unimpregnated, while much of the actually formed grains were small, shrivelled, and dark coloured.

After the appearance of the mildew, the wheat crop was very much lodged by heavy rains, about the beginning of August; and, in several instances, the straw had become so tender, from the effects of the mildew, that it burst open in bending, under the weight of the rain. By this, whole fields were utterly destroyed, so as not to contain a single grain

grain of wheat in the ears, and the straw became utterly unfit for fodder. In such cases whole fields have been mown, and led into the fold yards as bottoming; or have been dried like hay, and built up in stacks, to bed the fold yards, feeding sheds, or stables, as it may be wanted. In one instance, in Northumberland, a removing tenant absolutely refused to reap, or mow, or remove, his last crop of wheat, under the idea that, as it was utterly useless to himself, though of some use to convert into muck for his successor, he was not liable to be at the charge of cutting it down and removing, for the sole benefit of another person.

In other cases, where the plants remained alive and unbroken, the injury has only been a diminution of the quantity of produce, and deterioration of the quality of the grain, varying in different proportions, according to circumstances. Crops that were estimated, at the beginning of July, to produce 40 bushels of good wheat the acre, were valued at harvest to give six, ten, twelve, or up to twenty bushels, of very inferior grain.

The whole of the injury, however, which the wheat has sustained this season, does not seem attributable entirely to the mildew, but appears to have proceeded from the concurrence of two other causes: 1. A blight in the ear, occasioned by heavy showers of rain, while the wheats were in full flower, by which the *polen*, or *farina faecundans*, was washed away, and prevented from fecundating the florets. This idea is strengthened by the circumstance of the upper florets of the ears, and very often the whole of one side of the head, being very generally barren. 2. In consequence of a great deal of the crop having been lodged by heavy rain at the beginning of August, the grain produce, where impregnated, became *sloomy*, or small, shrivelled, and ill filled. Both of these causes are known materially to injure grain crops, in years when the mildew was not noticed.

Query 3.—'What was the state of the weather when it first appeared, and during its progress?'

Answer.

Answer.—As already stated, the weather, at the first appearance of the mildew, was foggy and misty, and this was followed by much rain, and frequent mists, during the progress of the disease.

Query 4.—' Did you try any measures to prevent its progress, and were they of any use?'

Answer.—No measures whatever were attempted to prevent its progress; neither has any measure for that purpose been ever spoken of, or even hinted at.

Query 5.—' Did it attack particular soils, or was it universal over your whole crops of wheat?'

Answer.—No discrimination of soils can be condescended upon, as more or less affected. It attacked strong, as well as free soil; and the only observable difference was, that high, open, free aired situations were comparatively free, while low grounds, much sheltered by plantations, and situations near rivers, were considerably the most obviously and materially injured. The near neighbourhood of the sea seems to have had a beneficial influence, in preventing, or lessening the disease.

Query 6.—' Did it attack particular kinds of wheat, or all sorts?'

Answer.—As far as can be learnt, all sorts of wheat, usually grown in Berwickshire, were equally, or nearly equally, affected, other circumstances being similar. A species or variety named *creeping wheat*, is alleged to have comparatively suffered less than the others.

Query 7.—' Was your wheat sown in autumn or spring, and did it attack both equally?'

Answer.—Both autumn and spring sown wheats were affected, but the autumn sown very obviously and materially more so than the spring sown crops. This difference was probably owing to the spring sown having flowered latter than the autumn sown, so as not to have had its polen so much washed away.

Query

Query 8.—'Was any of your wheat of the *bearded* sort, which it is said is not liable to mildew?'

Answer.—Bearded wheat is not cultivated, as a kind, in the lower part of Berwickshire. Heads, however, of that sort are often to be found in most fields, as an accidental mixture, more or less numerous. On careful inspection of a field of white wheat, infected by the mildew, having a considerable intermixture of bearded wheat, no difference could be perceived in the degree of disease, between the bearded and the smooth eared kinds.

Query 9.—'Were your fields enclosed or open, and were they equally subject to the disorder?'

Answer.—All our fields are inclosed. Large fields suffered equally with small ones, so far as the mildew itself was concerned. But the close neighbourhood of high hedges, thick trees, and plantations, evidently increased the evil consequences of the disease, by preventing the beneficial influence of the wind, for raising up the lodged wheats.

Query 10.—'Was any part of your wheat crops exempted from the mildew; and, if so, to what do you attribute that exemption?'

Answer.—Much of the wheat crop, in various soils and situations, is comparatively exempted, or at least, so little injured, that the produce is abundant, and of good quality. But no circumstances have occurred that can throw any light on the cause of the differences, at least in a practical view of the subject. Exemption, entirely or comparatively, from the heavy ground fog, already mentioned as the probable origin of the disease, being less lodged, from shorter straw, or less influence of heavy partial showers, or from a more favourable exposure to the prevailing winds, after the rain, to assist the lodged crop in rising up again, or from the polen having been permitted to exert its fecundating influence, either by flowering before the rain, during intervals of favourable weather, or after the rains were over: All of these may have contributed

tributed towards the better situation of some fields, but none of those circumstances are controulable by the husbandman.

Query 11.—'Have you ever experienced mildew before upon your farm, and do you recollect any particular circumstance regarding these mildews?'

Answer.—Mildew is to be seen upon the wheats, less or more, almost every year, but, as seldom occasioning any very material, or far spread, injury, is not much attended to. During the last fourteen years, it has never been any thing like so universal in Berwickshire as in the present season, and has never caused any remarkable injury, so as to occasion much speculation and enquiry. Even last year, 1807, however, some instances occurred of almost total destruction of particular fields of wheat, by the same disease which has been so universal and fatal this year. In one instance, in 1807, a most promising field of spring wheat, of fifty acres, in high order, produced only six bushels an acre of altogether unmarketable, and almost useless, grain. No particular circumstances can be recorded regarding its cause.

Query 12.—'What was done with the crop, and how does the straw answer, either as food for cattle, or for litter?'

Answer.—In general the crop is now harvesting in the usual manner, to save what little produce it may retain. Some instances of abandonment of the whole crop, or entire disregard of it as a grain crop, have been already mentioned, in the answer to the second query. It cannot be said how the mildewed straw, where it was not killed and rotted, may answer for fodder, as it has not yet been put to use. But assuredly that which is not rotted, and which has been harvested in a dry state, will serve perfectly well for litter.

Query 13.—'Have your crops of wheat been attacked by the smut, or have they suffered from being lodged, and to what extent?'

Answer.—The wheat crop has not been attacked by the smut, in any degree more than usual. The disease of smut is

is not known to attack wheat in this county, which has been pickled in an effectual manner, by means of thorough steeping in stale chamberlie, and afterwards dried by means of powdered quicklime. In the west Riding of Yorkshire, I am informed that using over years seed is found an effectual preventive of smut, without pickling. A light kiln drying of new wheat for seed, is said to have the same beneficial effect.

The wheat this year, as already mentioned, has suffered materially by being lodged. But the extent cannot be ascertained or guessed at, as this cause of injury has been so much complicated with the effects of the mildew, and with the blight, or injury of the impregnating process, as already mentioned in the answer to the second query.

It would require the combination of a vast number of particular estimates, from numerous farms, in various parts of the county, estimating the presumeable produce, according to the appearances of the growing crops, at the end of June, and comparative estimates, or proofs, of the actual or presumeable produce of these crops after harvest, to be able to give a tolerable appreciation of the extent of the evil generally over the county. Instances have been already adduced of total deficit, and of reduction to a half, a third, fourth, fifth, sixth, or seventh, part of the expected or estimated crop per acre, before the appearance of the disease. On the whole, perhaps, the wheat crop of Berwickshire may have suffered a defalcation in quantity of a fourth, or even a third part, of its original promise; but on the whole, perhaps, it may produce as much money at market, as if the whole wheat crop had been saved, owing to the higher prices; certainly not so, however, to these farmers who have suffered more than the average injury by the disease.

Query 14.—'Did the mildew attack any of your other crops; and, if it did, had it the same appearance and effects?'

Answer.

Answer.—No other crops were affected by the mildew in any respect whatever: neither did I ever see the mildew upon any other kind of corn.

Several years ago, I think six or seven, many fields of oats, within two or three miles, or less, of the sea coast, were exceedingly injured, a little before harvest, in consequence of a thick and stinking mist or fog, which rolled in from the sea for several days. The small pedicles of the florets, or the ramifications of the heads, became attacked by a fine black powder, which, however, was not microscopically examined, though perhaps it might likewise have been found to be a species of parasitical lichen. In consequence of this affection, the pedicles became exceedingly tender and brittle, insomuch that, in handling, during the reaping and binding, and other harvest operations, great quantities broke through at these small necks, and a considerable loss of grain was sustained, perhaps equal to from 6 to 18 bushels an acre. Nothing of the kind took place this year, 1808; and even the barley and oat crops seem to have been considerably less subject than usual to a species of smut, to which they are often liable in a small degree. I have heard it alledged by experienced farmers, that a good crop of barley was always less or more blackened; but on my own farm I have an excellent crop of that grain this year 1808, which will average fully forty-two bushels the acre, on which I did not observe a single blackened ear.

Beans, in many places, were this year, 1808, considerably infected with the collier insect, probably encouraged by the same series of weather which seemed to have induced the mildew on the wheat crop*. But in other respects there does

* Notwithstanding of this circumstance, the bean crop of 1808 has turned out, upon the whole, remarkably prolific.

does not appear to be any connexion whatever between the two disorders.

Additional Queries on the same subject[*].

Query 15.—'Was there not a field of wheat in Berwickshire, in 1808, partly manured with lime, partly with dung, and partly with sea-ware?'

Answer.—There was, in the immediate neighbourhood of Eyemouth.

Query 16.—'What was the size of the field, and the extent of the several divisions supplied with each kind of manure?'

Answer.—About 16 acres in whole, of which about five acres were manured with *ware*, or sea-weed.

Query 17.—'Was the soil, exposition, and height of the field, in the several divisions, nearly similar?'

Answer.—The field is a slope of uniform soil, having a south exposure; the sea-wared portion was at the lower end of the field.

Query 18.—'Is the field light or heavy?'

Answer.—The whole field is a light dry turnip soil.

Query 19.—'In what proportion might the *sea-wared* part be better than the rest, or was it entirely exempted from the mildew?'

Answer.—It was by no means exempted. The whole crop was much infected and injured by the mildew, but the sea-wared part retained a considerably healthier colour than the rest of the field, and its crop was estimated to be about a third part better than that of the rest, quantity of produce and quality, both taken into consideration.

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[*] These queries were answered by Mr Lawrie, land-steward to Mr Fordyce of Ayton, to whom their circumstances were familiarly known.

No other circumstances of importance, or worthy of notice, have occurred upon this subject during my inquiries; except that, in one instance, of severely mildewed and much lodged wheat, the steward of the farm informed his master, that he had seen one, or a few small worms on all the ears of the diseased crop. In another instance, a farmer informed me that, having brought home a handful of mildewed wheat from his field, and laid it on some flat pavement near his door, he observed a great number of minute maggots to issue from the ears, and to leap about upon the pavement. He compared these to the springing maggots which are often seen in rotten cheese, but vastly smaller. Of the nature or appearance of these worms, or maggots, no farther information has been procured. They must of course have been the larvæ of some small fly, scarabee, or moth, the multiplication of which had been peculiarly favoured by the peculiarity of the season, or which had been attracted particularly to the wheat in consequence of its diseased state.

On the whole, the disease in the wheat of crop 1808, seems certainly to have been produced by the unfavourable state of the weather at the very critical period of flowering, and to have been utterly unsusceptible of any preventive, precautionary, or curative human efforts.

The foregoing is the best account of this serious calamity, which I have been able to gather or compose, from my own observation, and the information of many experienced farmers, and has been scrupulously kept free from any hypothetical reasonings respecting the hidden causes of the appearances, and their injurious consequences to the crop.

Ayton, 19*th Sept.* 1808. R. K.

No. IV.

Queries on Spring Wheat, and Answers by the Reporter.

The subsequent queries were transmitted by Sir John Sinclair to the reporter soon after those already given in the preceding number of this appendix. In drawing up the answers, he was very materially assisted by Mr Joseph Lawrie, the very intelligent land steward upon the estate of Mr Fordyce of Ayton. As intimately connected with the subject of the foregoing report, they are deemed not unworthy of being here inserted.

Query 1. "What is the latest period at which winter wheat can be sown with safety in spring?"

Answer. Not later than the first week in March, even on the best soils of this country, with full confidence of success; though often sown a month later, even with tolerable success.

Obs. It has been often sown much later, and with success. But the above may be considered as the best rule, taking the average of seasons; as later sowing, in seasons any way unfavourable, are liable to ripen late, to be small headed, and small grained, and to suffer much from shaking winds before reaping, even before complete ripening.

It

It may be farther remarked, as a matter of very important consideration, that the crop of spring sown winter wheat, from seed which has been the produce of spring sowing, ripens nearly a fortnight earlier, all other circumstances being similar, than when the spring sown seed has been the produce of autumn, or Lammas sowing, usually called winter-sown. This is advanced on the authority of many eminent farmers in Berwickshire, who have been long and extensively experienced in the cultivation of spring sown winter wheat. This is uniformly, in Berwickshire, called *spring-wheat*; and is the *triticum hybernum* of Linnæus. The other species, or variety, the *triticum æstivum* of the Swedish naturalist, is more properly denominated in English *May wheat*, and has been many years abandoned in this county, owing to its vastly inferior quality, and consequently bad sale at market.

Query 2. "Can all sorts be sown in spring, both red and white?"

Answer. Both sorts are sown; but in general the white is preferred for spring sowing, because found to ripen earlier. If *red* be used for this purpose, it ought to be sown earlier than the month of March.

Obs. For some years past, a variety of *red* wheat, denominated *creeping* wheat, has been a good deal cultivated in this county, and on the other side of the Tweed. It is found to ripen earlier than any other of the red varieties, and was observed to have been materially less injured by the mildew of last season 1808, than any other kind of wheat in this district. It has likewise been found, by experience, to answer considerably better than any other variety on thin soils; and some farmers now sow no other kind either in winter or spring.

This variety has acquired its peculiar and singular designation of *creeping* wheat from the circumstance of *tillering*, stocking, or planting out much more liberally than the other varieties, either of red or white wheats. It is said

to have been introduced into Northumberland from Yorkshire, where it is reported to have been successfully cultivated on poor sandy soils. It is principally esteemed on account of its superior hardiness, which would certainly recommend it to very general use, were it not somewhat inferior in quality to the other kinds of red wheat. Those who have had considerable experience in cultivating this variety, assert that it resists the effects of frost in the early stages of its growth better than the other kinds; is less liable than all the other kinds to be thrown out in spring; and that it yields greater returns on poor soils.

Query 3. " Is the crop of spring wheat ever lost, or trifling in produce?"

Answer. Not when the land is in proper condition, and when the season of sowing has been properly attended to, as already mentioned.

Obs. In general, according to the experience of those farmers who have long attended to the cultivation of spring sown winter wheat, nearly as many bushels of spring wheat are reaped from the acre, after turnips eaten on the ground by sheep, as of barley in the same circumstances. Besides that, the barley crop, in these circumstances of high condition of the soil, is apt to be lost or injured by superabundant luxuriance. The grass and clover crop, likewise, sown along with the spring wheat, in such circumstances, is, for the most part, more secure than when sown along with barley; as wheat, in general, is less apt to lodge.

When circumstances do not admit of sowing spring wheat, in proper season, after turnips, it is customary to take a crop of barley, laid down with the seeds of artificial grasses, and to postpone the wheat crop, as a succession to the hay or grass. The only difference, in this case, being the peculiar year of the series, or rotation of crops, in which the wheat crop occurs.

No.

No. V.

Farther particulars respecting the Harbour of Eyemouth *.

THE harbour of Eyemouth lies at the corner of a bay, in which ships can work in and out at all times of tide, or lie at an anchor secure from all winds, except the northerly and north-easterly. From this circumstance its situation seems very advantageous; but as the mouth of the river, or harbour, lies open to the northerly winds, ships cannot lie in safety therein without going up beyond the elbow of the present quay, where the water being shallower by several feet, and the breadth much contracted, the harbour is not only defective in point of capacity, but in safety also; for at a full sea (the mouth being wide), the sea tumbles in with so much impetuosity, that great seas find their way round the elbow, and make the vessels, even there, lie not so quiet as to be wished.

In order, therefore, not only to enlarge the harbour, but very greatly to increase the safety of vessels lying therein, it is proposed to build a north pier, to defend the harbour mouth; and to this end, nature has furnished a ledge of rocks,

* These observations refer to the state of the harbour before building the north pier, and were made by Mr Smeaton, the celebrated engineer.

not only capable of making the most excellent of all foundations for such a pier, but in as advantageous a direction as could be wished; upon which a pier is proposed to be built, according to the plans accompanying this report; for, according to the direction therein specified, the harbour will be defended from all such seas as annoy the bay, and the only points from whence the harbour could be affected by seas coming in through the mouth, is land-locked by the points of the bay; so that the harbour will, in its whole extent, be perfectly safe in all winds. It is also to be noted, that the same circumstances which concur to make the harbour safe in all winds, afford the means of vessels getting in and out in all winds; and this proceeds from the entry into the harbour lying nearly at a right angle with the direction into and out of the bay.

1. If the wind is right a-head, to vessels coming into the bay, it will of course be smooth water, and there being room enough to turn, they can work in till they are near the bottom, and then sail with a fair wind right into the harbour.

2. If a vessel comes into the bay before the wind, with a great sea, she will also have the wind fair to sail into the harbour.

3. If the wind is right a-head to her going into the harbour, she will have a fair wind into the bay, with smooth water, so that after coming to an anchor she can warp herself in.

4. In like manner a vessel that wants to go out:—if the wind blows right into the bay, she will have a fair wind out of the harbour, and having room in the bay, can work herself out to sea, unless it blows so hard as to bring on a great sea, and if so, it would be undesirable to be out at sea upon a lee-shore.

5. If the wind is right a-head to a vessel desiring to go out of the harbour, as the bay will be smooth, she can warp out; and being out, has a fair wind out of the bay.

6.

6. A vessel going before the wind out of, or into the harbour, will have a fair wind out of, or into the bay respectively; and a vessel going before the wind out of, or into the bay, will have a fair wind out of, or into the harbour respectively.

It is also a great advantage, that there is a good flow of tide, which at spring tides is said to be twenty feet; and there is at the lowest ebb, several feet of water at low water, between the proposed pier heads, so that there will be seldom less at neap tides than sixteen or seventeen feet of water into the harbour, which is capable of receiving vessels from three to four hundred tons, according as they are more flat or more sharp built, and which afterwards can, upon a greater flow of tide, be got into a more advantageous birth.

Another advantage to the executing the proposed design, arises from a great quantity of rough rocks that lie at the north-westerly point of the bay, very proper for building the outsides of the body of the pier, the inside of which may be done with rough stones, won or blasted from the rocks neighbouring to that upon which the pier is proposed to be built. By this means the pier may be executed at a trifle of expence, in proportion to the extent and utility of the design; for the rocks that are represented within the intended pier, will be removed and made smooth, so as to procure an addition of harbour room at little or no charge, as they will be used within the pier. When this is done, there will be an addition of harbour room in the space between the elbow before mentioned and the pier heads, capable of holding thirty ships of middling size, with sufficient passage; which in time of war will be very useful on this coast, not only for the refuge of coasters from the enemy, but in bad weather for privateers, and for small sized vessels acting offensively.

Memorial concerning the Harbour of Eyemouth.

THE gentlemen of the county of Berwick, sensible of the natural advantages and general utility of the harbour of Eyemouth, have done all in their power towards rendering it as safe and commodious as possible.

Near twenty years ago, they raised among themselves, by subscription, without any public aid, a sum exceeding 1500l. in order to build a pier on each side of the little river that runs into the bay of Eyemouth, according to a plan given in by a very able engineer. The intention of one of these piers was to serve as a wharf wall, as also to deepen the harbour, by preventing the return of the gravel which is forced out by floods in the river. The other was intended for a bulwark against the heavy seas which break in from the north-east, the only side on which the harbour is exposed.

The sum at that time subscribed was entirely exhausted in building the first pier, or wharf wall. That building, however, has had all the good effects that were expected from it; the depth of water is greatly increased, and the bar at the mouth of the river totally removed; and as the harbour has by means of it been enlarged, and made more commodious, the trade of the place, and the resort of shipping, have become every day more considerable.

Encouraged by the success of what they have already done, and not doubting that they will meet with aid from the public, in a work of such general importance, the gentlemen of the county of Berwick have resolved to attempt, by a new subscription, to raise such a sum as will enable them to build the other pier, or bulwark, and thereby complete the harbour. With this view they employed Mr Smeaton to survey the harbour, and give them a plan and estimate. They thought, with his advice, they would proceed on the surest grounds, and that his known abilities, and

superior

superior knowledge in these matters, would give weight to their application to the public. The fullness and accuracy of his report, makes any more particular description of the harbour itself unnecessary.

It is also unnecessary to mention the advantages that will flow from this work, to the county in which it is situated. The very large sums that have been subscribed, both now and formerly, by almost all the inhabitants, shew their conviction of the good effects it will have. The intention of this memorial is chiefly to point out some of the advantages which the public in general will receive from it, and which give room to hope for aid, not only from government itself, but from the royal burghs of Scotland, from the different offices of insurance, and from all those who are in any way concerned in the trade on the east coast of Britain.

The coast between the Humber and the Firth of Forth, is known to be one of the most rugged and dangerous in Europe; and in all that space there is not one harbour, except Eyemouth, accessible in stormy weather.

When ships are employed on that coast, between Holy Island Scares and the Firth of Forth, if the wind blows high from the north-east, it becomes almost impossible for them to clear the promontories, and they have no chance of safety, but by running into Eyemouth, by which means, even in the present situation of the harbour, the crew will be safe; but for want of the proposed bulwark, or break-water, the ship, and cargo, particularly if what is on board is perishable, are still in the greatest danger.

When ships bound either southward or northward, are stopt by contrary winds, they may put into Eyemouth without danger of detention, for they can work in or out with any wind; and as there is a greater depth of water there than in any other harbour between the Thames and the Forth, equally accessible, they cannot be neaped; whereas, without this harbour, or until it is made safe, ships going the one way,

way, are, in contrary winds, forced to put back to the Firth of Forth, and those going northward, must sail back to some of the ports on the coast of England, where they are in danger of being detained, both by want of water and by not being able to get out but in particular winds; and in either case, their voyage back is along a rugged and dangerous coast.

It is very properly observed in Mr Smeaton's report, that the harbour of Eyemouth will be very useful on this coast for the refuge of coasters from the enemy. It will also be a proper station for privateers, and the small sized vessels acting offensively, as well as for the custom-house and excise yachts. Hitherto all the King's ships, of every kind, acting on this coast have been stationed at Leith, which is twenty miles from the mouth of the Forth; and it is well known, that the enemy's privateers, as well as smuggling vessels, have often been in those seas, when the King's ships and yachts are either confined by contrary winds in the Firth of Forth, or, by being at such a distance, the mischief has been done before they could come to prevent it; for the same wind which brings the enemy's privateers and smuggling vessels to this coast, confines the King's ships within the Forth: whereas no enemy's ship, or smuggling vessel, can appear between Holy Island Scares and the Red Head, without being discovered from Eyemouth; and as they can work out of that harbour in every wind, it is certain, that if the King's ships and yachts were stationed there, the enemy's privateers durst not appear, to annoy the trade, and smuggling in those parts would be totally suppressed *.

No.

* Not one vessel acting offensively, man of war, armed ship, privateer, or revenue cruizer, has ever entered Eyemouth harbour, down to the close of 1808, though the improvements proposed by Mr Smeaton have been long completed; excepting one small revenue cruizer about seven years ago. This is probably owing to its being a tide harbour, and because the bay is too open, and liable to heavy swells, in certain winds.

NO. VI.

STATISTICAL NOTICES OF BERWICKSHIRE.

SECT. 1.—*Introductory Observations.*

In the course of the years 1790—1798, the Statistical Account of Scotland, a work unrivalled for useful national information, was published by Sir John Sinclair, Bart. the original proposer and present President of the Board of Agriculture. In that interesting work, the minute circumstances of every parish in Scotland were carefully detailed; and it was deemed adviseable to have appended to this report, a condensed statistical account of the *thirty-two* parishes into which Berwickshire is divided, brought down from that former period to the year 1808. By this, a tolerably accurate comparison might have been instituted of the progress of the county towards improvement, during the period which has elapsed since the former statistics were collected. Assuming the middle year, 1794, of the former collections on this subject, the present enquiry would have afforded a view of the changes which had taken place in the course of fourteen years.

For

For this purpose, circular letters, under the authority of the President of the Board of Agriculture, were addressed to the reverend ministers of the respective parishes, containing a series of queries for procuring information on this curious and interesting subject. Unfortunately some of the objects of this enquiry were not seen in a favourable light, by many of those persons from whom the clergy might have received the requisite information to enable them to answer the transmitted queries. In consequence of this untoward circumstance, from *three* parishes only of the county have any answers whatever been received. *One* only of these was tolerably full and satisfactory; though even that was considerably defective in several of the topics on which information was requested. The reporter, therefore, finds himself most reluctantly compelled to abandon this curious and interesting object, in that form and degree which was pointed out for him.

Before proceeding to the general view of the statistics of the county, so far as the very imperfect data which have been communicated and collected will admit, it seems proper to state the substance of the information which has been derived from the three parishes from which answers to the circulated queries have been received. By these the nature, object, and extent of this proposed inquiry will appear. The chasms occasioned by the disappointment in the expected information, has been very imperfectly supplied by such incidental means as were attainable; but the data, on many important circumstances, are much too limited to admit of tolerable certainty, often not even of decent approximation in the calculated results which were wished to have been exhibited in a tabular view.

SECT. 2.—*Comparative View of the Parish of Ayton, in* 1794 *and* 1808.

1. *Population.*—In 1755, the population of this parish, as reported to the late Dr Webster of Edinburgh, was 797. In 1794, it amounted to 1245; having increased 448 in 39 years. In 1801, when the number of inhabitants was ascertained, under the provisions of the population act, they amounted to 1453; having increased 208 in these seven years. Since 1801, no enumeration has been made, and the population is considered as having been nearly stationary in the last seven years.

2. *Rents.*—The valued rent of the parish is L.6620. 1s. Scots, or L.551. 13s. 5d. Sterling. In 1794, as estimated in the Statistical Account of Scotland, the real rent was L.4420 Sterling. On the best information which can be procured, it was in 1808, L.10,750 Sterling. The probable purchase value, therefore, of the whole parish, in 1700, might not exceed L.12,000. In 1794 it might have sold for L.110,500; and is now worth, perhaps, L.268,750; above 22 times its value about a century ago.

3. *Stipend.*—The amount of the stipend depends upon the *fiars* of the county, a considerable part of it being payable in grain, but usually received in money, according to the rate of conversion of the immediately preceding fiars. The particulars receivable by the minister consist of L.78. 6s. 8d. Sterling, as money stipend, and L.8. 6. 8d. for purchasing communion elements of bread and wine; together with 64 bolls of barley, 32 bolls of oats, and 32 bolls of oatmeal. The minister has likewise a good manse, or parsonage house, with the requisite offices and garden, and about 13 acres of inclosed *glebe* land. There are two fishing boats in the parish, from which the minister has right to draw the *tiend* or tithe fish in kind; but receives an agreed modus of 25s. yearly

yearly from each. Valuing the house and offices at L.20; the glebe, as connected with a small farm occupied by the minister, at L.4 an acre; and converting the grain and meal according to the fiars of crop 1808; the total value of the living for that year may be estimated at L.334. 15s. 4d.

4. *Schools.*—The parish schoolmaster receives the legal maximum of L.22. 4s. 8d. as salary, and has a decent free house, garden, and school room. He is attended by from 70 to 100 scholars, and his total emoluments of office may extend to about L.110 a-year. There is another school in the village supported by subscription, at which from 40 to 50 scholars attend.

5. *Poor.*—In 1794 the total income for the parish poor was L.41. 13s. which had risen in 1808 to L.220. 10s. 2d. At this latter period there were 33 paupers on the roll, for whom the income gave an average of L.6. 13s. 7d. to each person. To produce this income, in addition to the session fund, derived from collections at church, *mort-cloth* or pall money at funerals, and one shilling on each marriage, amounting in 1808 to L.26. 3s. 6d. the assessment on the parish for that year, in equal proportions on the proprietors and tenants, amounted to L.194. 6s. 8d. not quite 4½d. on the pound rent, or somewhat less than 2¼d. a pound from the heritors, and as much from the tenants.

There are two meeting houses of dissenters from the establishment in the parish; but their collections do not go to the parish poor, although their poor are equally entitled to parochial aid.

No answers were received on the other subjects of enquiry, and no satisfactory information could be procured from any other sources.

SECT.

SECT. 3.—*Comparative View of Coldingham Parish, in* 1794 *and* 1808.

1. *Population.* In 1755, its population was 2313. In 1794 it amounted to 2391; and it singularly happened that in 1801, when the number of inhabitants was taken under the population act, there were exactly 2391. Though the births certainly exceed the deaths, yet, owing to a number of young men going into the navy, army, and militia, the population is preserved nearly stationary. No enumeration has been made since 1801; and little change is supposed to have taken place in the population since then.

2. *Rents.* The valued rent is L.12,937. 10s. Scots, or L.1078. 2s. 6d. Sterling. In 1794, the real rent, as estimated for the Statistical Account of Scotland, was L.8,680: But, as proved before the Court of Teinds, in a process for augmentation of stipend, the rent then actually was near L.11,000. In 1808, many of the farms having much increased in rent on new leases, some of them from L.450 to L.1650, the total rental of the parish cannot be less than L.20,000 Sterling. The entire fee-simple of the parish, in 1700, might be about, L.21,500; in 1794 L.262,500; in 1800 L.500,000.

3. *Stipend.* The total amount of this depends much on the yearly fiars. It consists of L.58. 6s. 8d. Sterling in money, 3½ chalders or 56 bolls of barley, and the same quantity of oatmeal. Twenty shillings yearly and two large fish, cod or ling, from each of five fishing boats, instead of fish-tithe; together with an excellent house and garden, and a large valuable glebe. The value of the whole, for 1808, might extend to about L.260 Sterling.

Besides the parish church, there is a chapel of ease at Renton, erected and endowed with a moderate stipend some years ago, by Sir John Stirling of Renton and Glorat, Bart.

Likewise

likewise a dissenting meeting-house in the village of Coldingham, and a very small meeting-house at West Reston, belonging to the changeable newfangled sect, usually named *missionaries.*

4. *Schools.* There are six schools in this parish; two of them public or parochial, and four private. Of the *first* parochial school, in the village of Coldingham, the salary is 300 merks Scots, or L.16. 13s. 4d. Sterling. The scholars are about 70 on the average; and the whole emoluments, including salary, school-fees, parish-dues, &c. may be worth about L.100 yearly; besides a dwelling-house, garden, and school-room. The salary of the *second* parochial school, at the village of West Reston, is likewise L.16. 13s. 4d. The average number of scholars is about 50; a school-room is already built, and a dwelling-house with a garden is intended to be added: The entire emolument of this school may extend to about L.50 yearly.

It may be noticed that the small salary annexed to this school has to be levied from the tenantry and cottagers of the whole parish, by the schoolmaster, in a prodigious multitude of minute sums, some payments being so low as a halfpenny each. This is vexatiously troublesome, and must occupy very unprofitably a great deal of valuable time. The schoolmasters salary ought certainly to be levied at the expence of the parish, along with the other parochial taxes, and paid in one sum to the teacher.

There is a private subscription school in the village of Coldingham, supported by subscription; the master of which has a fixed salary of L.60 yearly, and teaches about 30 scholars. In the same village, an infirm weaver teaches about 50 scholars; and a woman in the village generally has about 12 girls attending her school. At the village of Auchincraw, a private school is taught by a minister of the new missionary sect, at which about 80 scholars attend on the average.

Thus the whole six schools in the parish contain about 292 scholars; of which about 194 are boys, and about 98 girls.

98 girls. It is not to be supposed that this disproportion is owing to an equivalent excess of boys in the parish; but because the education of the girls is very much neglected.

5. *Poor.* The number of poor regularly enrolled is generally about 40. In April 1809 there were 42 on the roll. For their support, an yearly assessment is levied upon the proprietors and tenants, paid in equal moieties by each. This is generally what is called a 10, 12, or 13 months cess; and is ordered to be levied by an yearly meeting of the heritors or proprietors, after having made up a roll or list of the poor, with the weekly sum to be given to each for their support. The present amount of this tax over the whole parish is L.223. 10s. Besides which, the collections at church, and the hire of a herse belonging to the parish, afford about L.7. 10s. a-year; making the whole yearly revenue of the poor about L.230; affording an average yearly sum of L.5. 9s. 6d. for each poor person on the roll. In 1794, the total amount of the poor's fund was only L.79; but from the increased and increasing rents of the parish, the augmentation cannot be considered as burthensome. The whole assessment, in the proportion of L.20,000 rental, amounts only to 2¼d. in the pound rent; or 1⅛d. a pound on the landlords, and as much on the tenants. Occupiers of their own property pay both moieties of course.

6. *Horses, Cattle,* &c. Calculating by the roll for conversion of statute labour into money, and allowing for young horses and those past work, there may be about 460 horses of all descriptions in the parish; which may be estimated at L.25 each; or in total value L.11,500*. It is impossible

* The Rev. Author of this communication appears to have estimated this considerably too high. In a subsequent part of this appendix, the average value of horses in the county is taken at L.20; which rate would only give L.9,200 for the value of horses in this parish.

to form even a tolerable guess at the number of cattle and sheep in the parish, without an actual investigation into these particulars, which are perpetually fluctuating, in each farm, hamlet, village, and cottage. There may be 12 or 14 goats at Renton. Probably the parish may contain 400 swine, exclusive of sucking pigs; and there may be 10 or 12 asses.

7. *Acres.* The parish extends to about 27,000 acres; of which 5678 may be moor, or uninclosed and unimproved heathy or hill pasture, and 100 acres of peat-moss. All, however, is in absolute severalty; except some of the peat-moss, which was allocated at the division, for supplying fuel to the several villages and farms. The remaining 21,222 acres may be arable and green pasture; two-thirds of which may be convertible land, or under alternate aration and artificial grasses, and one-third permanent green pasture.

8. *Agricultural produce.* No specific answer can possibly be given to this query, for obvious reasons unnecessary to mention.

9. *Commerce,* &c. There is nothing which can be called commerce in this parish; which only contains a few petty shop-keepers in its three villages of Coldingham, West-Reston, and Auchincraw. About 14 years ago, there were fully 150 looms constantly employed in the parish; and a great many of these worked regularly for the cotton manufacturers in the west of Scotland. The number of weavers is now considerably diminished; and those remaining are principally employed in what is called customary work, or weaving of woollens and linens for farmers families and hinds wives. There is one fulling-mill, likewise employed as a scribling mill; and the fuller carries on the dying business, principally of coarse home manufactured woollens, and cleans blankets for the country round.

10. *Fisheries.* There are generally *five* fishing boats employed in the white fishery for catching cod, ling, haddocks,

docks, and codlings. They are estimated to take yearly about 6500 scores of small fish, valued at L.852. 10s.; which are mostly carried for sale to Edinburgh. They likewise take about 13,500 cod and ling, valued at L.352. 10s. which are mostly sold on the spot to a fish curer, who salts and dries them, or salts them green in barrels, according to the season, and sends them to different markets for sale, mostly to London. The whole produce of the fishery divided among 25 fishers, may afford an average gross yearly income of about L.48. 15s. to each individual. This statement is independent of the herring fishery, which is extremely precarious and fluctuating, but may be estimated at L.100 yearly for each boat, or L.20 to each fisherman. But from all these proceeds, the boats share must be deducted, which is appropriated for keeping the boat and tackle in repair, and as a rent to the proprietor, who sometimes is not a fisher. When he goes to sea, he draws two shares; one for the boat, and another for himself. The gains, therefore, of the common fishers may amount to about L.56 yearly for each; and of the skipper-proprietor to about double that sum; but both are liable to the expence of fishing tackle, lines, hooks, and nets, and the procuration of bait.

SECT. 4.—*Comparative View of Eyemouth Parish in* 1794 *and* 1808.

1. *Population.* In 1755, the population was 792. In 1794 it was 1000. In 1801, as taken under the provisions of the population act, it was 899; and is supposed to be much the same now.

2. *Rents.* The valued rent is L.1665. 7s. 3½d. Scots, or L.138. 15s. 7d. Sterling. In 1794, the real rent was L.1100 Sterling. In 1808, it was about L.2700. Hence the purchase value in 1700 might be L.3780; in 1794 L.27,500; and in 1808 about L.67,500; or nearly 30 times its value about a century ago.

3. *Stipend.* This consists of 66 bolls of barley, 56 bolls of oats, and 18 bolls of pease; which, at the fiars price of 1808, are worth L.197. 2s. The minister is entitled to tithe from *seven* fishing-boats belonging to the parish, and half tithe from stranger boats delivering fish at the harbour of Eyemouth. The average value of the whole is about L.15 yearly. The arable glebe contains 7½ acres of ground, let at L.4 an acre; and a small grass glebe is let for L.3 a-year. The manse and garden may be worth L.15 yearly. Hence the entire value of the living may be estimated at L.260 yearly.

It happens that a chalder of barley, or 16 bolls, worth, by the last fiars, L.24. 16s., are payable out of the teinds of this parish to the minister of Whitsome.

4. *Schools.* The parish schoolmaster is allowed L.16. 13s. 4d. of salary, being the legal minimum. The scholars on the average are 60; of which 40 are boys, and 20 girls. The whole emoluments may be worth about L.60 a-year. Besides this, there is a subscription school, having about 22 scholars, with a fixed salary of L.80. A missionary minister, likewise, teaches a school in the village of Eyemouth, at which about 50 scholars attend.

5. *Poor.* The present number on the roll is 9; but the average may be taken at 11. The yearly sum expended, principally arising from a small assessment, is about L.39, affording the average yearly sum of L.3. 10s. 10d. for each pauper; and the whole rate is only about 3d. on the pound rent, or 1½d. on the proprietors, and the same on the tenants, who mostly pay both moieties by special bargain.

No

No returns have been made on any other subject of enquiry.

HAD information been procured from all the 32 parishes in the county, similar to that derived from Coldingham, a very interesting statistical view of the county would have been acquired. As this has, unfortunately, not been the case, the reporter is under the necessity of confining himself to such general notices on this subject as he has been able to collect. These will be found detailed in the accompanying statistical table; many of the most interesting columns of which have necessarily been obliged to be left nearly blank. The principal circumstances will be best understood by reference to that table and to a series of observations and explanations which follow.

No notice has been taken, in this investigation, of the yearly numbers of marriages, births, and deaths, or what have been called the bills of mortality; which form a very material object of enquiry in all statistical inquiries: This has been chiefly owing to the difficulty experienced in procuring information from the different parishes; and likewise because the registers are very imperfectly filled up; owing to the numerous bodies of sectaries or dissenters, who do not registrate their marriages and births in the parochial books; to numerous clandestine marriages, and to numbers being buried in distant cemeteries, not strictly parochial.

Before proceeding to the statistical table, it has been deemed right to give a combined abstract of some principal circumstances in the progress or changes of those three parishes from which returns have been received.

SECT. 5.—*Combined Recapitulation of these three Parishes.*

1. *Population.* In 1755 they contained 3902 persons; in 1794 the number was 4636; and in 1801, had risen to 4743.

2. *Rental and value.* In 1700, the valued rent, and perhaps the real rent, was L.1768. 11s. 6d. Sterling. In 1794 L.14,210. In 1808 L.33,450; amounting to twice and a half of what it was only fourteen years before, and nearly *nineteen* times what it probably was a century ago.

In 1700 the whole three parishes might probably have been purchased for L.37,000. In 1794, the purchase value could not be less than L.400,000; and in 1808, the whole might have sold for L.836,500; giving a rise in value of fee-simple in a century of nearly *twenty-three* times.

3. *Stipends.* In 1794 the stipends of these three parishes were L.345, or L.115 on the average to each. In 1808 their entire stipends were L.854. 15s. 4d.; and the average to each L.284. 18s. 3d.

4. *Schools.* In 1808 the total emoluments of four parochial schoolmasters were L.320, or L.80 on the average to each. With a population of 4636, there were, on the average, at all the eleven schools in the three parishes, parochial and private, 554 scholars, or somewhat more than one eighth part.

5. *Poor.* With a population of 4636, the average number of poor in the three parishes receiving regular aid is 84, or one from each 55 persons. The entire yearly sum allotted for their aid is L.483, affording an average yearly allowance for each pauper of L.5. 4s. 8d.; and the average yearly poors rate amounts to 3¼d. on the pound rent, half on the proprietors and half on the tenants.

TABLE

TABLE I.

Circumstances respecting Population.

1.	2.	3.	4	5.	6.	7.	8.	9.	10.
Parishes.	Statist. Acc. of Scot.		1st Period.				2d Period.		
	Vol.	Page.	In 1755	In 1794.	In-crease	De-crease	In 1801.	In-crease	De-crease
1. Abbey St Bathans	XII	61	80	164	84	—	138	—	26
2. Ayton -	I	79	797	1245	448	—	1453	208	—
3. Bonkle -	III	153	691	622	—	69	622	—	—
4. Channelkirk	XIII	384	531	600	69	—	640	40	—
5. Chirnside	XIV	1	383	961	578	—	1147	186	—
6. Cockburnspath	XIII	21	919	883	—	36	930	47	—
7. Coldingham	XII	43	2313	2391	78	—	2391	—	—
8. Coldstream	IV	410	1493	2521	1028	—	2269	—	252
9. Cranshaws	VI	436	214	164	—	50	166	2	—
10. Dunse -	IV	378	2593	3324	731	—	3157	—	167
11. Earlston	IV	248	1197	1351	154	—	1478	127	—
12. Eccles -	XI	230	1489	1780	291	—	1682	—	98
13. Edrom -	I	116	898	1336	438	—	1355	19	—
14. Eyemouth	III	112	792	1000	208	—	899	—	101
15. Fogo -	XX	270	566	450	—	116	507	57	—
16. Fouldean	XI	116	465	344	—	121	393	49	—
17. Gordon -	V	88	737	912	175	—	802	—	110
18. Greenlaw	XIV	501	895	1210	315	—	1270	60	—
19. Home -	III	290	959	1000	41	—	1000	—	—
20. Hutton -	IV	196	751	920	169	—	955	35	—
21. Ladykirk	VIII	71	386	590	204	—	516	—	74
22. Langton	XIV	577	290	435	145	—	428	—	7
23. Lauder	I	72	1795	2000	205	—	1760	—	240
24. Legerwood	XVI	484	398	422	24	—	495	73	—
25. Longformachus	I	69	399	452	53	—	406	—	46
26. Merton	XIV	580	502	557	55	—	535	—	22
27. Mordington	XV	173	181	335	154	—	330	—	5
28. Nenthorn	VI	336	497	400	—	97	400	—	—
29 Polwarth	XVII	93	251	288	37	—	291	3	—
30. Swinton -	VI	322	494	898	404	—	875	—	23
31. Westruther	VII	109	591	730	139	—	779	49	—
32. Whitsome.	XVI	348	399	590	191	—	560	—	30
Totals.			24,946	30,875	6418	489	30,529	855	1201

TABLE II.

CIRCUMSTANCES RESPECTING RENTS.

1. Parishes.	2. Valued Rent. Scots.	3. Valued Rent. Sterling.	4. Real Sterling. In 1794.	5. Real Sterling. In 1808.
1. Abbey St Bathans,	L. 1113 10 10	L. 94 4 3	L. 600	
2. Ayton -	6620 1 0½	551 13 4	4420	L. 10,750
3. Bonkle -	6232 11 0½	519 7 7	4100	
4. Channelkirk	4727 13 9	393 19 6	2000	
5. Chirnside -	4307 5 10	358 18 10	2880	
6. Cockburnspath	6561 3 11½	546 15 4	4500	
7. Coldingham	13037 10 0	1086 9 2	8680	20,000
8. Coldstream	8743 4 7	728 12 0	6100	
9. Cranshaws -	1271 7 1	105 18 4	860	
10. Dunse -	11069 0 2½	922 8 5	7780	
11. Earlston -	5748 13 11½	495 14 6	4000	
12. Eccles -	15604 3 4	1300 7 0	11000	
13. Edrom -	10128 7 8½	844 0 8	6493	
14. Eyemouth	1665 7 3½	138 15 7	1110	2700
15. Fogo -	4041 2 11	336 15 3	2180	
16. Fouldean -	2595 16 8	216 6 4	1730	
17. Gordon -	4398 8 9	366 10 9	2930	
18. Greenlaw -	6836 3 11½	569 13 8	3530	
19. Home -	3961 9 2	330 2 5	2640	
20. Hutton -	6380 14 7	531 14 6	4000	
21. Ladykirk -	4393 15 0	366 3 0	2930	
22. Langton -	3092 14 2	257 14 6	2660	
23. Lauder -	11433 1 5½	952 15 11	6000	
24. Legerwood	4023 3 6½	335 6 7	1430	
25. Longformacus	3710 18 9	309 4 11	1700	
26. Merton -	5675 5 0½	472 18 9	2400	
27. Mordington	2045 16 8	170 9 9	2000	
28. Nenthorn -	2380 19 9½	198 8 4	2040	
29. Polwarth -	1624 9 7	135 7 5	1000	
30. Swinton -	4424 9 7	368 14 1	4030	
31. Westruther -	4418 4 7	368 3 8	2950	
32. Whitsome -	5058 1 5½	421 10 1	3209	
Totals -	L.177,534 16 3½	L.14,795 4 5	L.113,882	L.230,000

TABLE III.

Parochial Stipends.

Parishes.	In 1794.	In 1808.
1. Abbey St Bathans	L. 57	
2. Ayton -	135	334
3. Bonkle -	126	
4. Channelkirk	84	
5. Chirnside -	76	
6. Cockburnspath	120	
7. Coldingham	125	260
8. Coldstream	120	
9. Cranshaws	50	
10. Dunse -	158	
11. Earlston -	110	
12. Eccles -	122	
13. Edrom -	110	
14. Eyemouth -	95	260
15. Fogo -	110	
16. Fouldean -	116	
17. Gordon	110	
18. Greenlaw -	105	
19. Home -	118	
20. Hutton -	115	
21. Ladykirk -	105	
22. Langton -	85	
23. Lauder -	95	
24. Legerwood	95	
25. Longformachus	105	
26. Merton -	110	
27. Mordington	85	
28. Nenthorn	98	
29. Polwarth -	86	
30. Swinton -	136	
31. Westruther	90	
32. Whitsome	155	
Totals.	3407	

TABLE IV.

Parochial Schools.

	In 1794.		In 1808.		
	No. of Scholars.	Schoolmaster's Emoluments.	No. of Scholars.	Salaries.	Total Emoluments
1. Abbey St Bathans			85	L. 22 4 8	L. 110
2. Ayton -					
3. Bonkle -		L. 16 11 0			
4. Channelkirk					
5. Chirnside -					
6. Cockburnspath	50	10 1 8			
7. Coldingham			70	16 13 4	100
8. Coldstream			50	16 13 4	50
9. Cranshaws					
10. Dunse -	95				
11. Earlston -					
12. Eccles -					
13. Edrom -					
14. Eyemouth -			60	16 13 4	60
15. Fogo -					
16. Fouldean -					
17. Gordon					
18. Greenlaw -					
19. Home -					
20. Hutton -					
21. Ladykirk -					
22. Langton -	20				
23. Lauder -					
24. Legerwood		11 6 8			
25. Longformachus					
26. Merton -	35	8 6 8			
27. Mordington		7 0 0			
28. Nenthorn					
29. Polwarth -					
30. Swinton -					
31. Westruther					
32. Whitsome		8 10 0			

TABLE V.—CIRCUMSTANCES RESPECTING THE POOR.

	1	2	3	4	5	6	7	8	9	10
	In 1794.					In 1808.				
Parishes.	No. of Poor.	Capital Funds.	Collections, &c.	Total income.	Average to each.	No. of Poor.	Collections, &c.	Assessments.	Total income.	Average of each.
		L. s. d.	L. s. d.	L. s. d.	L. s. d.		L. s. d.	L. s. d.	L. s. d.	L. s. d.
1. Abbey St Bathans										
2. Ayton -				41 13 0		33	26 3 6	194 6 8	220 10 2	6 13 7
3. Bonkle -										
4. Channelkirk	12			30 0 0						
5 Chirnside										
6. Cockburnspath	6	28 0 0								
7. Coldingham						40	7 10 0	222 10 0	230 0 0	5 15 0
8. Coldstream				220 0 0						
9. Cranshaws										
10. Dunse -	90			230 0 0						
11. Earlston	30			70 0 0						
12. Eccles	30			120 0 0						
13. Edrom -										
14. Eyemouth						11			39 0 0	3 16 4
15. Foge -	7		23 2 0							
16. Fouldean										

TABLE V.—Continued.

	1	2	3	4	5	6	7	8	9	10
Parishes.	In 1794.					In 1808.				
	No. of Poor.	Capital Fund.	Collections, &c.	Total income.	Average to each	No. of Poor.	Collections, &c.	Assessments.	Total income.	Average to each.
		L. s. d.	L. s. d.	L. s. d.	L. s. d.		L. s. d.	L. s. d.	L. s. d.	L. s. d.
17. Gordon	18									
18. Greenlaw	41		125 3 0							
19. Home	8									
20. Hutton	11	8 6 8	10 0 0	35 0 0						
21. Ladykirk										
22. Langton	11		5 0 0	33 14 0						
23. Lauder	30			80 0 0						
24. Legerwood										
25. Longformachus	13			15 0 0						
26. Merton		11 0 0		32 0 0						
27. Mordington	2									
28. Nenthorn	6			25 4 0						
29. Polwarth	12			26 13 4						
30. Swinton	12			32 14 0						
31. Westruther		24 0 0	10 0 0	36 0 0						
32. Whitsome										
Averages	607			1724 17 10	2 16 10	557			3114 0 0	5 15 4

Sect. 6.—*Observations on the Statistical Tables.*

The original sketch of the accompanying Statistical Tables of Berwickshire, containing all the circumstances previous to 1808, was transmitted to the reporter from a highly respectable quarter, and is principally constructed, so far, from the very important information contained in the Statistical Account of Scotland, a work which has been several times mentioned in this report, and which cannot be too highly prized. The reporter has made such additions to this table as the nature and extent of the information he has been enabled to collect would admit; and has much to regret that he has been unable to complete its interesting columns. The following explanations of the several columns of these tables have been thought necessary.

1. *Explanation of Table I. respecting the Population of the County.*

Columns 1, 2, 3, contain the names of all the parishes in the county, and the volume and page of the Statistical Account of Scotland in which a description of each parish is to be found, and of those circumstances belonging to, or connected with each, at the time those accounts were drawn up. These were all published between the years 1790 and 1798, both inclusive; and therefore the medium year, 1794, is assumed as the date to which the several statistical circumstances in the preliminary portion of the table apply.

Columns 4, 5, give a comparative view of the population of Berwickshire, as collected by the late Rev. Dr Webster of Edinburgh in 1755, and as reported by the authors of the statistical accounts of the respective parishes in 1794.

According

According to the statistical accounts, the total population of the county, at the period of their composition in 1794, was 30,875. As reported to Dr Webster, the population in 1755 was 24,946; giving an increase of 5929 individuals in 39 years. This is at the rate of 152 yearly on the average, or at the rate of 6 per cent. per annum In other words, each original hundred persons required *ten* years to add *six* persons to their number, making up at the same time for all who had died from among them in that period. Supposing this rate of increase to go on equably, it would have required 166 years for the population of 1755 to have become doubled; whereas, at the rate in which the people of the United States are said to increase, this population of 1755 would rise to three millions in 166 years, instead of 61,750; or would have become multiplied by 120, instead of being only doubled. These observations are only taken according to simple ideas of arithmetic, without attending to the accumulation on the increments.

Columns 6, 7, give a view of the particular increases and decreases in the respective parishes during that period of 39 years. By these it appears that the population in 26 parishes increased by 6418; while in six parishes there had been a diminution of 489.

It may be noticed, that this augmentation of population occurred while the county was rapidly passing from the state of common and intermixed lands, to inclosure and absolute severalty; the poetical period of depopulation and deserted villages.

In column 8, the population of the several parishes is given from the returns made to the requisition of the population act in 1801: And as no enumeration has taken place since, that enumeration may be assumed as stationary, between 1801 and 1807.

According to column 5, the population in 1794 was 30,875. And by the enumeration of 1801, it had then fallen

len to 30,529; giving a decrease of 346 in 7 years. From these two estimates, as contained in columns 5 and 8, it appears that the population of 14 parishes had diminished in numbers by 1201, while that of 14 other parishes had increased by 855, the 4 remaining parishes having remained stationary.

This latter period, during which the population of the country appears to have suffered a decrease of 346 persons in 7 years, has been one of unexampled prosperity to the landed interest. We may therefore presume that the population of Berwickshire had risen to an equality with the demand for labour; yet, in that period, as already noticed in chap. xv. sect. 1. § 2. the price of labour had considerably increased, and has since continued to advance regularly and progressively. The years 1800-1 were, however, peculiarly severe upon the labouring part of the community, by scarcity and dearness of provisions, and may have occasioned a defalcation in the births, and an unusual mortality among the old and infirm, and even among the infants of the poorest people. These seven years, likewise, were years of continued war, by which numbers of our people were called away to the defence of their king and country.

One obvious mistake runs through all the population columns of the table, but for correcting which no data can be procured. In the Statistical Account of Scotland, Vol. III. p. 290. the united parishes of Home and Stitchel are stated at a population of 1000 souls in 1794. But as Stitchel pertains to the county of Roxburgh, the proportion which belongs to Berwickshire for Home cannot be ascertained. Yet, as Home contains a tolerable village, and Stitchel is the entire property of one gentleman, and is so little populous as to require no funds for aiding its poor, this error is probably very small and immaterial.

Columns 9, 10, give a view of the particular increases and decreases of the population of the respective parishes, in the second

second period of *seven* years, from 1794 to 1801. As no returns have been given whatever of the state of population in 1808, from any of the parishes, no comparison can be instituted respecting this last period of seven years: But from the great increase in the wages of labour, and consequent easy circumstances of the labouring part of the people, it is reasonable to suppose that the population ought to be actually upon the increase.

Some circumstances relative to the population of the county have already been noticed in Chap. xvi. Sect. xii.

2. *Explanation of Table II. respecting the Rents of the County.*

This table gives the results of such information as could be procured relative to the valued and real rents of the county.

The nature of the valued rents of lands in Scotland has been already explained in Chap. II. Sect. 1. Column 1 contains the names of the several parishes. Column 2 gives the valued rent of each in Scots money; which is reduced to Sterling money in column 3, without attending to minute fractions in the calculation. In the notices transmitted to the reporter, for constructing the earlier portion of these statistical tables, the valued rent of the whole county is stated *in cumulo* at L.178,365. 7s. 3½d. Scots; whereas the sum of the particulars sent, as in this table, is only L.177,534. 16s. 3½d. Scots. Hence some clerical error must have taken place in transcribing the particular sums belonging to the respective parishes, but which is of no real importance. It makes a difference of only L.830. 11s. Scots, or L.69. 4s. 3d. Sterling on the valued rent of the whole county. Of that larger sum L.178,365. 7s. 3½d Scots, the value in Sterling money, is L.14,863. 15s. 7½d.; which may be considered as the total real rental of the county about the year 1700.

And

And as the value of land in Scotland did not exceed twenty years purchase at that period, and for a considerable time afterwards, we may assume L.300,000 as the full value of the fee simple of the county about a century ago.

In column 4, the real rent of the county in 1794 is stated at L.113,882 Sterling. Here likewise a clerical error in the particular rentals of the parishes must have occurred; as, in the notices accompanying the original sketch for a statistical table of the county, the total of the real rent is rated at L.114,642 Sterling, making a difference of L.760, certainly not important in the result of a list of rentals altogether dependant upon guess, or hypothetical data.

Assuming the real rent of 1794, as in the transmitted notices just mentioned, and adding, from the same source, L.1500 as the rents of salmon fishings, and L.4000 as the presumed rents of houses in the towns and villages; the entire rental of the county in 1794 would be L.120,142. Mr John Home computed the land rent of the county in 1797, at L.112,000, the salmon fishings at L.1500, and took no notice of the value of houses. Hence, the general result of his opinions, and those derived from the above mentioned statistical notices do not very materially differ. Calculating the value of the whole county in 1794 at 25 years purchase of the land, 20 years purchase of the salmon fishings, and 12 years purchase for the houses in towns and villages; the fee simple of the county was then worth about L.2,945,000, or nearly *ten* times its value in 1700: And the total rental of 1794, including fishings and houses, may be taken as *eight* times the rental of 1700.

Column 5, added by the reporter, was intended to have contained the enumeration of the rental of the county, as expected to have been supplied, for 1808, in answers to the statistical queries mentioned at the commencement of this appendix. The nature and extent of the disappointment which has been incurred on this subject has been already explained.

explained. Returns from three parishes only have been received, the rents of which, in 1794, amounted to L.14,200, and which had risen in 1808 to L.33,450. On such imperfect data, it were improper to attempt filling up the remainder of this column hypothetically, which might have been done if the omissions had been as few as the supplied information. Calculating, however, hypothetically on the very imperfect data procured, the rents of the whole county in 1808 would have amounted, in the same proportional rise, to L.277,095; which is certainly considerably higher than the truth.

By the returns of the surveyors for the assessment of the property tax for the years 1807 and 1808, the rent of the county, real and estimated, then amounted to L.226,000. This includes every species of rent on lands, houses, and fishings; and likewise the acknowledged profits on trade, which are very small in this county. As that survey was made in 1806-7, and as numerous new leases, and consequent considerable rises of rent, have taken place since then, the rental, excluding profits or trade, now probably reaches L.230,000: And the fee simple of the county may now be worth, at 26 years purchase, L.5,980,000, or very near 20 times its value in 1700; and the yearly rental may be assumed at 15½ times what it then was.

In the notices which accompanied the sketch of a statistical table transmitted to the reporter, the following general view of the landed property in Berwickshire was given, in reference to the several extents of the valued rents of the different properties, as in the year 1794.

		Scots.				*Sterling.*		
25 properties,	from L.10,791. 16s. 1½d. Scots, the highest to L.2000 Scots of valued rent,	L.104,400	19	5	or L.8,700	1	7 1/12
22	ditto, from L.2000 to L.1000 Scots –	30,240	8	4	– 2,520	0	8 2/12
40	ditto, from L.1000 to L.400 Scots –	25,924	7	3	– 2,160	7	3 6/12
27	ditto, from L.400 to L.200 Scots –	8,252	17	2½	– 687	14	9 5/12
18	ditto, from L.200 to L.100 Scots –	2,661	17	3½	– 221	16	5 7/12
160	ditto, under L.100 Scots * – –	6,884	17	9½	– 573	14	9 10/12
292	proprietors, having of valued rent in whole –	L.178,365	7	3½	L.14,863	15	7 7/12

By reducing these valued rents, in Sterling money, according to the ratio already mentioned, as 8 to 1, in 1794, and as 15½ to 1 in 1808, a tolerably just hypothetical view of the proportional values of the landed property in the county may be thus estimated, as at these two periods:

* Pendiclers, feuars, &c.

			In 1794.				In 1808.			
25	properties,	from	L.7,193 6 9	L.69,600 12 11 $\frac{8}{24}$	L.13,938 4 $3\frac{22}{24}$	L.134,851 5 $1\frac{23}{24}$				
		to	1,333 5 0		2,583 5 0					
22	ditto,	from	1,233 5 0	20,160 5 $6\frac{16}{24}$	2,583 5 0	39,060 10 $9\frac{3}{24}$				
		to	666 12 6		1,291 12 6					
40	ditto,	from	666 12 6	17,282 18 2	1,291 12 6	33,485 12 $8\frac{8}{24}$				
		to	266 13 4		516 13 2					
27	ditto,	from	266 13 4	5,501 18 $1\frac{16}{24}$	516 13 2	10,459 18 $10\frac{17}{24}$				
		to	133 6 8		258 6 7					
18	ditto,	from	133 6 8	1,774 11 $6\frac{8}{24}$	258 6 7	3,438 6 $10\frac{11}{24}$				
		to	66 13 4		129 3 $3\frac{12}{24}$					
160	ditto,	under	66 13 4	4,589 18 $6\frac{8}{24}$	129 3 $3\frac{12}{24}$	8,892 19 $7\frac{19}{24}$				
Total estimated rental in 1794				L.118,910 4 $10\frac{1}{3}$	Ditto in 1808				L.230,188 14 $0\frac{1}{3}$	

The

The preceding circumstances afford a very pleasing, and, it is believed, a true picture of the great and rapid improvement of the county. It may be said, however, that the landed interest, and those who are directly connected with it, are alone in a state of prosperity and advancement. The other kinds of industry in this county are few and of small importance; but, such as these are, they are at present either stationary or in a state of comparative deterioration, owing to the peculiar circumstances of the times. The employments of masons and carpenters are greatly at a stand, for want of foreign timber. The linen manufacture, always confined to mere home consumption, labours under peculiar difficulty, amounting almost to stagnation, owing to the extreme scarcity of foreign flax; and the ordinary weavers have lost their accustomed employment from the great cotton manufacturers of the west of Scotland, in consequence of the stagnation of foreign trade. The small part of the paper manufacture which is carried on in Berwickshire, labours under difficulties, proceeding from scanty supplies of materials, and continual fluctuations in prices. There is nothing deserving the name of woollen manufacture in the county to call for any observations. The industry of shoemakers and taylors, butchers and bakers, plough and cart-wrights, and of shop keepers, finds abundant employment.

3. *Explanation of Table III. respecting Ecclesiastical livings.*

In the second column of this table, the values of the several ecclesiastical livings, as in 1794, are given from the Statistical Account of Scotland. The whole emoluments of the thirty two ministers of the establishment, at that former period, amounted to L.3407 Sterling, including the estimated

estimated values of their respective glebes. This would then give an average yearly income for each minister of L.106. 9s.

The other column was intended to have contained the values of the several livings for the year 1808, as increased, partly by legal augmentations of stipend, by the Court of Teinds, and partly by increased rental values of glebes, and higher fiars, or average prices of grain payments. But from the want of information, as already explained, three parishes only could be inserted in this column. The entire value of these three in 1794 was L.355 yearly, and the average value of each L.118. In 1808 their entire value had risen to L.854, and their average to L.284. These data are much too scanty to admit of founding any satisfactory deductions as to the value of the other livings in the county. Had all the livings in the county been augmented in a similar proportion to these three, the total value of the 32 livings in 1808 would have risen to L.9088, and the average value of each would be L.284. But this has not by any means been the case, owing to various circumstances; though a considerable number of the livings have certainly been augmented fully in that proportion, and some of them a good deal higher; but the information received on this subject has not been sufficiently accurate to allow of insertion in this column.

4. *Explanation of Table IV. respecting the Parochial Schools.*

This table was intended to have exhibited a comparative view of the state and circumstances of the parish schoolmasters and parochial schools of the county, as in 1794 and 1808. But the information which has been received is so exceedingly scanty, that the table has been necessarily left nearly

nearly blank, and no general views can be given of the subject. All that can be said is that, in the populous parishes, the situation of a parochial schoolmaster has become tolerably respectable, by a legal increase of salary, and some augmentation of the school fees. In these parishes the average emoluments may now be about L.100 yearly, and some are considerably more.

In 1794 the scholars in the three parishes of Cockburnspath, Dunse, Langton, and Merton, having a population of 5199 persons, were 200; which would give, in the same proportion, 1187 scholars for the whole county, or 37 scholars to each parish. But this is very inaccurate, as there are, and were then, many other schools besides the legal parish establishments. The emoluments of the schoolmasters were then computed at the average of L.20 for each yearly; which would give L.640 yearly at that time to the whole schoolmasters of the county.

In 1808, in the three parishes from which returns have been made, having a population of 4743, the number of scholars at four established parochial schools was 265, and the emoluments of the four schoolmasters are computed at L.320. If this could be assumed as the average of the county, the total number of scholars would be 1680, the average yearly emoluments for each schoolmaster L.80, and the aggregate of the whole emoluments for 33 established teachers L.2640. But in these three parishes, besides the 265 scholars attending the parochial schools, there are 239 others at private and subscription schools; which gives 514 scholars from a population of 4743 persons, and would give 3308 scholars for the whole county.

5.

5. *Explanation of Table V. respecting the Poor.*

This table was intended to have contained a distinct comparative view of the state and circumstances of the poors funds and parochial poor of the county, at the two periods of 1794 and 1808; but, owing to want of information, as already explained, this object could not be attained. According to the information procured, as to the period 1794, as abstracted in columns 1, 2, 3, 4, 5, the number of poor in 1794, in 17 parishes, containing a population of 17,238 individuals, was 339, and the average yearly allowance to each was L.2. 16s. 10d. Assuming this as a fair proportion for the whole county, the paupers would then be 607, to a population of 30,875 individuals, or one to every 51 persons; and the total sum expended on the poor in 1794 would be L.1724. 17s. 10d.

According to the Rectified Report of Berwickshire Agriculture, published by Mr John Home in 1797, the average number of poor receiving assistance, for the ten years preceding 1784, was 353, or one in 80 of the general population. The aggregate assistance divided among these, for the average of that period, was L. 886. 17s. yearly, or about L. 2. 10s. 3d. yearly to each pauper. From the same authority, the average number receiving aid in ten years succeeding 1784, or from that year down to 1794, was 444, or one person to each 66 in the general population. The aggregate average yearly assistance was L. 1272. 10s.; or about L. 2. 17s. 4d. to each person yearly.

The information received on this subject for 1808, extending only to *three* parishes, does not admit of presuming to

to construct any average view that can be depended upon. In these three parishes, having a population of 4743 individuals, there are 84 paupers on the roll, or one to every 56 persons. The aggregate sum divided among these was L. 489. 10s. 2d. or L. 5. 15s. 4d. to each. This would give the number of poor in the whole county in 1808 as 540, and the aggregate assistance divided among them as L. 3114. But, as already observed, the data are much too limited even for drawing any probable conclusions; and these results are probably much too high.

In the statistical account of the parish of Bonkle, Stat. Acct. of Scotl. Vol. III. p. 153, the following observation occurs respecting the police of Berwickshire, which the reporter is under the necessity of saying exists almost only as an excellent regulation, not by any means fully acted upon, though frequently endeavoured to be enforced.

"There are no begging poor allowed in this county. Two constables are appointed with salaries, whose business is to go through the county, to attend fairs, markets, and public meetings, and to take up all gypsies, tinkers, beggars, and disorderly persons. These are to be carried before the nearest Justice of the Peace, by whom they are committed to the county jail for some days, and are then conducted to the extremity of the county nearest to their respective parishes. Besides their salary, the constables are allowed ninepence a mile for carrying them to jail, which is paid from the rogue money. By this institution, the county is kept free from beggars, and very few petty thefts are committed."

SECT.

SECT. 7.—*Number and Value of Horses, Cattle, Sheep, and Swine in the County.*

From the returns made in the Statistical Accounts, in 1794, in 15 parishes, the valued rents of which amounted to L.85,557. 11s. Scots, there were 2868 horses, 10,685 head of cattle of all ages, and 54,136 sheep. From these data, the subsequent estimate of the live stock in the whole county has been constructed; and hypothetical values are affixed, as at the two periods of 1794 and 1808, supposing the numbers to remain the same, or nearly so, at the latter period, which is highly probable.

	In 1794.		In 1808.	
5,740 Horses, at	12l.	L. 68,880	at 20l.	L.114,800
21,300 Cattle,	6l.	127,800	10l.	213,000
108,000 Sheep,	15s.	81,000	25s.	130,000
Swine estimated at		2,300	Ditto,	3,200
Total value of live stock,		L.279,980		L.461,000

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